MacWEEK

01.08.96 *The Newsweekly for Macintosh Managers* VOLUME 10 NUMBER 1

ATI readies low-cost, multipurpose board

$300 card does video, graphics

By Carolyn Said

Having champagne tastes on a beer budget hasn't been an option for would-be multimedia producers. But a new multifunction PCI card from ATI Technologies Inc. may make multimedia affordable even for entry-level users.

The XClaim MM, which ATI will debut at Macworld Expo in San Francisco this week, will put a price tag of only $300 on a raft of multimedia features, including video digitizing, QuickTime and graphics acceleration, and enhanced colors and resolution. In addition, ATI will offer a $150 MPEG daughtercard and an external TV tuner box that plugs into the XClaim MM, each priced at about $150. All three pieces are due by June.

"For $600 total, it's a pretty good poor man's multimedia studio," said Rick Doherty, director of The Envisioneering Group

See ATI, Page 140

Big Island to spin out YoYo: Telephony tool uses Caller ID

By Joanna Pearlstein

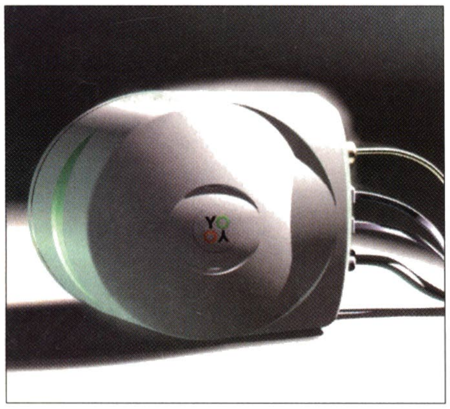
A new company wants to make dealing with your phone calls child's play. At Macworld Expo this week Big Island Communications Inc. will show YoYo, a telephony product that screens and routes calls and integrates with personal information managers.

Geared toward the small-office, home-office market, YoYo is a $149 hardware-software combination that attaches to a computer's ADB port and to a phone; it is expected to ship this March. YoYo uses Caller ID to identify incoming calls and trigger designated actions associated with that call. The device works with Centrex but not PBX systems.

YoYo can look up the number of an incoming call in a contact manager and display the caller's information. Or, it can send Caller ID information to a pager so the user can respond to the call immediately.

The software works

See YoYo, Page 140



YoYo uses Caller ID to trigger contact lookups and indicate a caller's identity.

NEWSPAPER SECOND CLASS

Apple to raise low-end tower

By Joanna Pearlstein

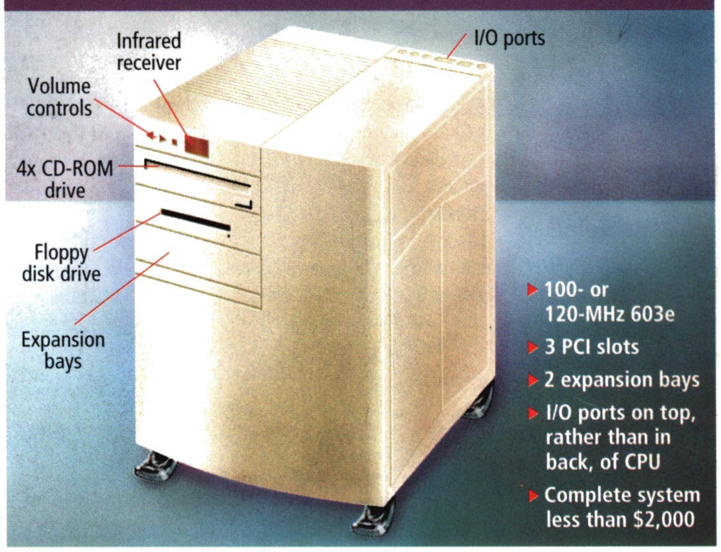
In an effort to prove that vertically oriented computing isn't just for the rich and power-hungry, Apple will release this summer a PowerPC Performa in a new tower design, sources said.

Instatower, the code name of Apple's first tower-style computer for the entry-level consumer, will reportedly use either a 100- or 120-MHz PowerPC 603e processor and will have three 7-inch PCI slots. An Instatower with 8 Mbytes of RAM, a 1.2-Gbyte Enhanced IDE (Integrated Drive Electronics) hard drive, quadruple-speed CD-ROM drive and a 15-inch monitor is expected to cost less than $2,000, sources said.

The CPU's enclosure reportedly places connectors on top,

See Instatower, Page 140

Instatower: Apple's first consumer tower



- 100- or 120-MHz 603e
- 3 PCI slots
- 2 expansion bays
- I/O ports on top, rather than in back, of CPU
- Complete system less than $2,000

Office makes a bundle

Power will offer Microsoft's suite

By Mark Hall and David Morgenstern

Power Computing Corp. hopes to link its name with Microsoft Corp.'s in a deal that would marry Microsoft Office to selected PowerWave and PowerCurve clones. Despite a Microsoft denial, sources said an agreement will be announced this week at Macworld Expo San Francisco.

To begin this quarter, Power will sell PowerWave and the new PowerCurve machines on an a la carte basis, with Office preloaded on the hard drive. The company will continue to include ClarisWorks and Intuit Inc.'s Quicken.

However, Dave Meltzer, Microsoft group product manager for Macintosh applications, said, "The official news is that there is no agreement."

Despite the denial, sources insist that the deal is signed and will be the first bundle of Office on the Mac. A source familiar with the contract said Microsoft "got a

See Power, Page 142

INSIDE

Show Picks

Going to expo? Here's the stuff you won't want to miss **See Page 6**

1995: Year of the Clown

MacWEEK roasts 1995, a year that kept an entire industry in stitches **See Page 68**

The State of Mac Management 1995

Web sites and Windows and clones, oh my! Mac managers review their 1995 experiences **See Page 46**

In Reviews

- After Effects 3 glows
- MiniCad 6 overflows
- PageMill needs to grow

See Page 79

Expo news flash

Check out late-breaking expo product announcements **See Page 139**

Kodak and Fuji focus efforts on digital cameras

By Kelly Ryer

Two big names in photography are looking to make low-cost digital cameras a focal point of Macworld Expo in San Francisco. Eastman Kodak Co. and Fuji Photo Film U.S.A. Inc. will bring their latest offerings to the masses this week.

Kodak's Digital Science DC-50 succeeds the company's first handheld camera, the DC-40. The new model, which will cost about $979, adds a zoom lens and a slot for Type I or II PC Cards; Kodak also said it has significantly enhanced the camera's image quality.

The DC-50's image sensor, op-

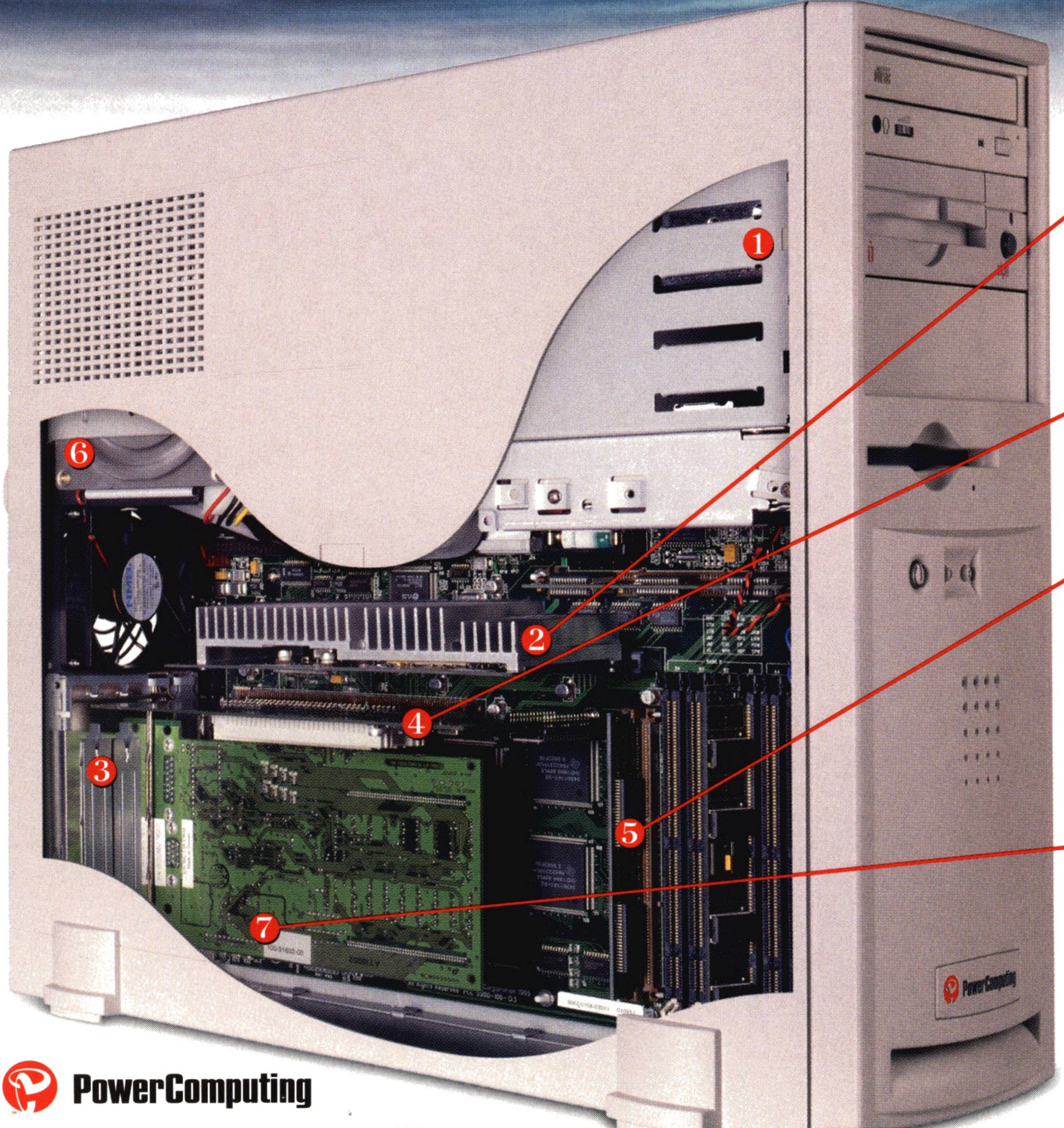
See Cameras, Page 142

Power Computing Introduces Fastest MacOS System Ever

150MHz PowerPC 604

Fast PCI and NuBus Expansion

Accelerated 64-bit PCI Video and Fast SCSI



① 3 Front Accessible Drives for optional Quad-Spin (4X) CD-ROM, Iomega Zip, Iomega Jaz, or SyQuest EZ-135

② Easily upgradeable Plug & Play CPU daughtercards featuring the PowerPC 604 at 120, 132 and 150MHz

③ Fast PCI 3-slot expansion

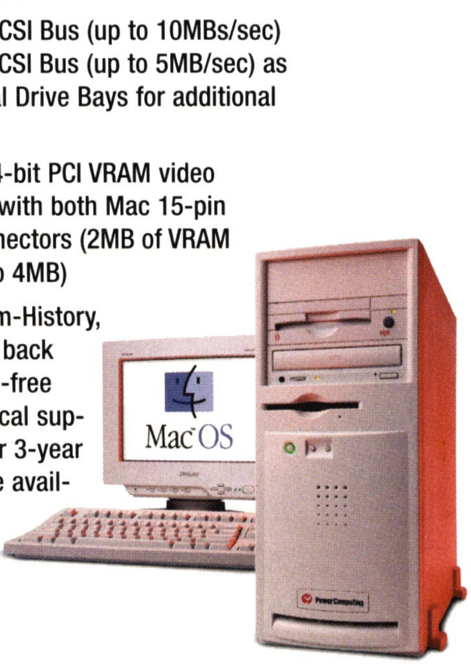
④ Need NuBus? Get both PCI and NuBus with Power Computing's STARGATE Choose either 3 PCI slots or 2 PCI and 2 NuBus slots - allows you to reconfigure at any time from NuBus to PCI

⑤ Eight DIMM slots for up to 512MB of RAM using 64-bit DIMMS with fast interleave memory; Socketable High Performance L2 DIMM Cache Slot allows for either 256K, 512K or 1MB

⑥ Internal Fast SCSI Bus (up to 10MBs/sec) and external SCSI Bus (up to 5MB/sec) as well as Internal Drive Bays for additional storage

⑦ Accelerated 64-bit PCI VRAM video graphics card with both Mac 15-pin and SVGA connectors (2MB of VRAM upgradeable to 4MB)

⑧ Love-Me-Or-I'm-History, 30 day money back guarantee. Toll-free lifetime technical sup-support. 1, 2, or 3-year on-site service available, starting at only $49.



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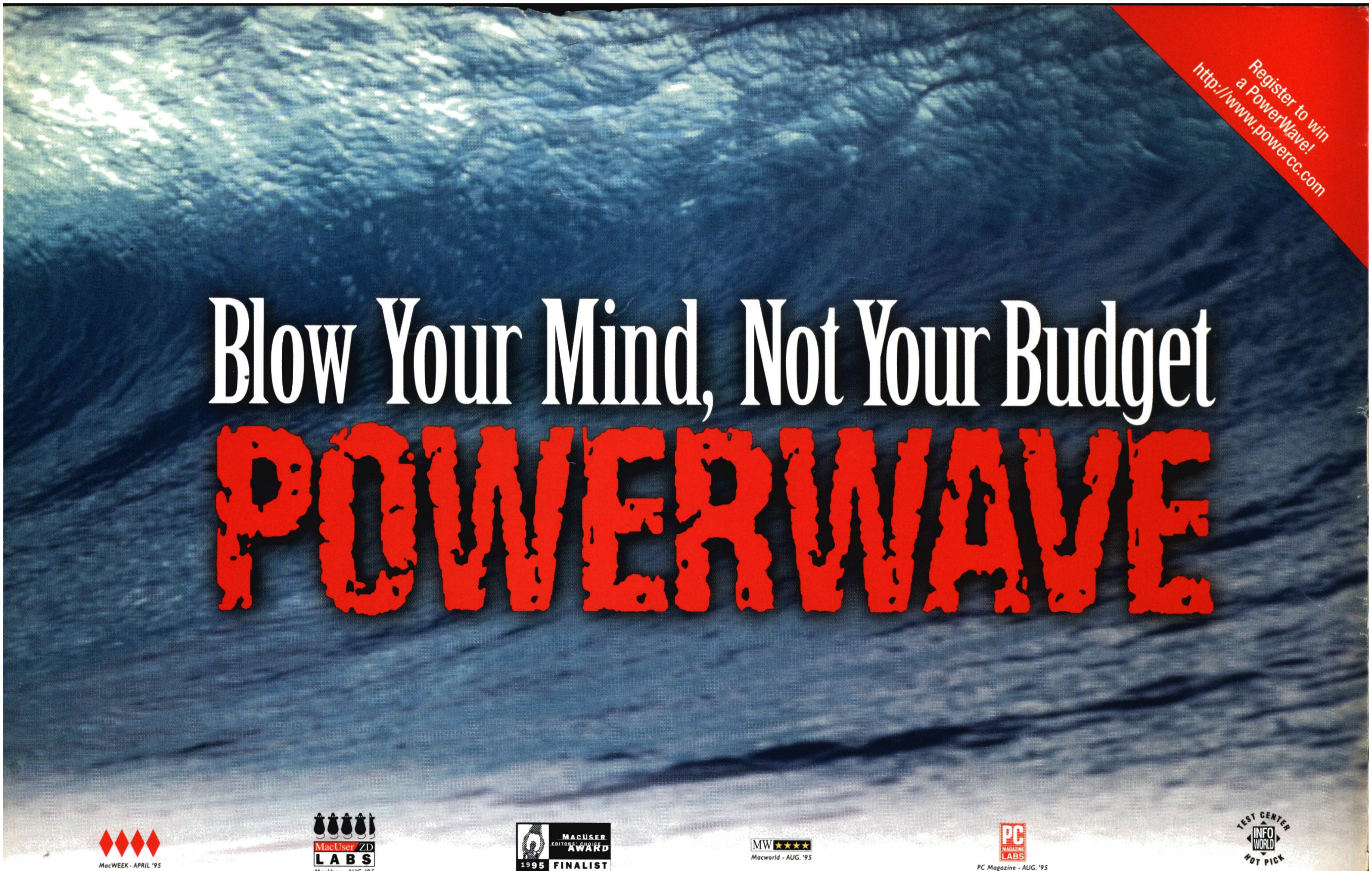

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MacWEEK - APRIL '95

MacUser - AUG. '95

MACUSER EDITORS' CHOICE AWARD 1995 FINALIST

Macworld - AUG. '95

PC Magazine - AUG. '95

TEST CENTER INFOWORLD HOT PICK
Infoworld - JUNE '95

Editor's Rave!

"Considering the purchase of a PowerMac?...We strongly recommend that you take a serious look at what Power Computing has to offer."
MacUser- Aug 95

"A machine we love even more than the PowerMac 7500 - the PowerWave 604"
Macworld- Feb 96

MW EDITORS' CHOICE
MW ★★★★

"They might as well have come from Apple - the performance and compatibility are that good."
Macworld- Aug 95

"The Power Computing PowerWave 604 is a very impressive Macintosh"
New York Times, November 7, 1995

"...an excellent Mac alternative, whether or not you are pinching your pennies."
PC Magazine- Aug 95

"Power Computing's systems match their PowerMac counterparts for speed and compatibility and are every bit as good as a dyed-in-the-wool Macintosh."
Infoworld- June 95

PowerCurve 601/120 Starter
120 MHz PowerPC™ 601+
8MB RAM (256MB Max RAM)
Upgradeable CPU daughtercard
Optional Level 2 Cache (1MB Max)
850MB 11ms SCSI Hard Drive
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Built-in Graphics w/1MB VRAM upgradeable to 4MB VRAM
Extended Keyboard & Mouse
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PowerWave 604/120 Starter
120MHz PowerPC™ 604
16MB RAM (512MB Max RAM)
Optional 256K, 512K, or 1MB Cache
1.0GB 11ms SCSI Hard Drive
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Desktop Computer Case
Extended Keyboard & Mouse
$3199

PowerWave 604/120 Home Office
120MHz PowerPC™ 604
16MB RAM (512MB Max RAM)
Optional 256K, 512K, or 1MB Cache
1.0GB 11ms SCSI Hard Drive
14 inch .28 DP Monitor
Quad-Speed (4X) CD-ROM Drive
Internal Iomega Zip™ Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Extended Keyboard & Mouse
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FREE

PowerWave 604/132 Hot Pick
132 MHz PowerPC™ 604
16MB RAM (512MB Max RAM)
256K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Extended Keyboard & Mouse
$3699

PowerWave 604/132 MultiMedia
132 MHz PowerPC™ 604
24MB RAM (512MB Max RAM)
256K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
14 inch .28 DP Monitor
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Tower Configuration
Extended Keyboard & Mouse
$4299

PowerWave 604/150 Hot Pick
150 MHz PowerPC™ 604
16MB RAM (512MB Max RAM)
512K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
14 inch .28 DP Monitor
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Tower Configuration
Extended Keyboard & Mouse
$4799

PowerWave 604/150 XL
150MHz PowerPC™ 604
32MB RAM (512MB Max RAM)
512K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
15 inch Sony Monitor
Quad-Speed (4X) CD-ROM Drive
Internal Iomega Zip™ Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/4MB VRAM
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Post Office Box or Street Address
City | State | Zip

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☐ 01. Yes ☐ 02. No

1 What is your organization's primary business activity at this *entire* location?

(Select one only) Write Answer Here ➡ ☐

Non-Computer Related
01. Graphic Arts
02. Publishing
03. Advertising, Public Relations, Promotion
04. Digital Media Development
05. Entertainment/ Broadcast
06. Commercial Printer
07. Service Bureau/ Pre-Press
08. Aerospace
09. Architecture, Engineering
10. Telecommunications
11. Government
12. Manufacturing
13. Education: College/ University/Trade
14. Education: High School/Elementary
15. Finance: Banking, Accounting, Insurance, Real Estate, Legal
16. Health, Medical
17. Non-Computer Retailer, Wholesaler, Distributor
18. Research and Development
19. Agriculture, Mining, Construction, Oil
20. Transportation, Utilities

Computer Related
22. Manufacturer (Computers, Software, Peripherals)
23. VAR, VAD, Systems/ Network Integrator
24. Retailer/Distributor
25. Systems House/Data Processing Service
26. Computer Consultant
27. Other Businesses and Services
99. Other__________ (please specify)

2 What is your job function?

(Select one only) Write Answer Here ➡ ☐

A. Networking/Data Communications
B. MIS/DP/Information Systems
C. Systems Engineering
D. Telecommunications
E. Graphic Arts/Design
F. Production/Pre-Press
G. Video Production
H. Audio Production
I. Communications/ Publishing/Public Relations/Advertising
J. Engineering/Architecture
K. Science/Research & Development
L. Education/Training/ Development
M. Manufacturing/ Operations/Production/ Quality Control
N. Administration/ Management/Personnel
O. Accounting/Finance/ Legal
P. Sales/Marketing
Q. Purchasing
R. Consulting
Z. Other__________ (please specify)

3 Which of the following brands of systems and/or applications software do you have installed at this *entire* location? (Check all that apply)

Operating Systems
☐ 01. System 7
☐ 02. System 6, 5 or earlier
☐ 03. Unix/Xenix/AUX/AIX
☐ 04. PowerOpen
☐ 05. Windows 3.X
☐ 06. Windows NT
☐ 07. Windows 95
☐ 08. NeXTStep
☐ 09. Solaris
☐ 10. OSF/Motif
☐ 11. Other__________ (please specify)

Network Operating Systems
☐ 13. Novell NetWare
☐ 14. Unix/NFS
☐ 15. LAN Manager
☐ 16. Banyan VINES
☐ 17. AppleShare
☐ 18. DEC PathWorks
☐ 19. Other__________ (please specify)

Groupware
☐ 21. Lotus Notes
☐ 22. Windows for Workgroups
☐ 23. FirstClass
☐ 24. Novell GroupWise
☐ 25. Apple Open Collaboration Environment (AOCE)
☐ 26. Other__________ (please specify)

Database Engines
☐ 28. Oracle
☐ 29. Sybase SQL Server
☐ 30. Ingres
☐ 31. Informix
☐ 32. 4D Server
☐ 33. DB2
☐ 34. Other__________ (please specify)

On-Line Services
☐ 36. America Online
☐ 37. CompuServe
☐ 38. e-World
☐ 39. Prodigy
☐ 40. Internet
☐ 41. Delphi
☐ 42. Genie
☐ 43. Other__________ (please specify)

4 Please indicate the quantities of the computers currently installed and indicate the computers planned for purchase in one year at this *entire* location.

(Write in accurate quantities for all that apply.)

	Currently Installed (Quantity)	PLAN TO PURCHASE
Macintosh/Compatible		
Apple Power Mac 8100	1.	1.☐
Apple Power Mac 7100	2.	2.☐
Apple Power Mac 6100	3.	3.☐
Radius Power Mac Compatible	4.	4.☐
Power Computing Power Mac Compatible	5.	5.☐
Daystar Power Mac Compatible	6.	6.☐
Other Power Mac Compatible	7.	7.☐
Macintosh Quadra	8.	8.☐
Macintosh Centris	9.	9.☐
Macintosh Performa	10.	10.☐
Macintosh PowerBook	11.	11.☐
Macintosh Duo	12.	12.☐
Macintosh Other (II, LC, SE, etc...)	13.	13.☐
Other Mac Compatible	14.	14.☐
Other Desktops		
IBM/Compatible Desktop/Laptop/Notebook	15.	15.☐
PowerPC (Non-Mac Compatible)	16.	16.☐
Workstation (SPARC, MIPS, HP/Apollo, etc.)	17.	17.☐
Other Microcomputers	18.	18.☐

USE NUMBERS ONLY

5A How many servers are installed at this *entire* location? (Use numbers only)

☐

5B How many LANs are installed at this *entire* location? (Use numbers only)

☐

5C How many Macintoshes are connected to the LANs indicated in Question 5B above? (Use numbers only)

☐

6 If applicable: how many Macintoshes are sold, resold, or recommended in one year at this *entire* location? (Answer one only)

A. Retailer: Number sold per year__________
B. Reseller: Number resold per year__________
C. Consultant: Number purchased by your clients through your firm's recommendation per year__________
D. Other: Number sold/resold/recommended per year__________
☐ E. Not Applicable

7A Which of the following Macintosh-related products do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Systems
☐ 01. Apple Macintoshes
☐ 02. Mac Compatibles
☐ 03. IBM Compatible Micros
☐ 04. Servers
☐ 05. Workstations
☐ 06. Minis/Mainframes
☐ 07. Newton PDA
☐ 08. Pen-Based Computers

Networking
☐ 10. LANs
☐ 11. WANs
☐ 12. Mac to PC Links
☐ 13. Mac to Mini/ Mainframe Links
☐ 14. Mac to Unix Workstation Links
☐ 15. Modems
☐ 16. Communication/ Network Software
☐ 17. Bridges/Routers/ Gateways
☐ 18. Hubs
☐ 19. NICS

Printers
☐ 21. Laser
☐ 22. Color Laser
☐ 23. InkJet
☐ 24. Color InkJet
☐ 25. Dye Sub
☐ 26. Thermal Wax
☐ 27. Plotter
☐ 28. Portable Printer

Image Input
☐ 30. Digital Camera
☐ 31. Flatbed Scanners
☐ 32. Handheld Scanners
☐ 33. Slide Scanners
☐ 34. Drum Scanners
☐ 35. Black/White Scanners

Displays
☐ 37. 14 inch
☐ 38. 15 inch
☐ 39. 17 inch
☐ 40. 21+ inch
☐ 41. LCD Projection Panel
☐ 42. Presentation Monitors

Peripherals
☐ 44. UPS
☐ 45. External Speakers
☐ 46. Input Devices
☐ 47. Video Deck
☐ 48. Image Setter

Storage
☐ 50. Photo CD
☐ 51. Magneto Optical
☐ 52. RAID
☐ 53. Hard Drive 1 Gig +
☐ 54. Hard Drive < 1 Gig

Add-In Boards
☐ 56. CD Recorder
☐ 57. Memory Boards
☐ 58. Display Boards
☐ 59. Video Digitizer Boards
☐ 60. Accelerator Boards
☐ 61. Sound Boards
☐ 62. MIDI
☐ 63. Video Capture/ Compression

99.☐ None of the above

● Your Signature ____________________

Title ____________________ Date ___/ ___/ ___

7B Which of the following systems and/or applications software do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Graphic Arts
☐ 01. Desktop Publishing
☐ 02. Electronic Publishing
☐ 03. Painting/Drawing Programs
☐ 04. Photo Retouching
☐ 05. Page Layout
☐ 06. Illustration Programs
☐ 07. Fonts
☐ 08. Pre-Press
☐ 09. Color Management
☐ 10. Digital Video
☐ 11. Other__________ (please specify)

Multimedia
☐ 13. Authoring Software
☐ 14. Video Editing
☐ 15. Sound Editing
☐ 16. Music Composition/ Editing
☐ 17. Animation
☐ 18. Clip Media (Sound and Art)
☐ 19. Other__________ (please specify)

Presentation Graphics
☐ 21. Presentation Software
☐ 22. Multimedia Presentations
☐ 23. Charting Program
☐ 24. Other__________ (please specify)

Design/Engineering
☐ 26. CAD/CAM
☐ 27. 2/D - 3/D Modeling
☐ 28. Simulation
☐ 29. Other__________ (please specify)

Business Applications
☐ 31. Word Processing
☐ 32. Spreadsheets
☐ 33. Databases
☐ 34. Project Management
☐ 35. Accounting/Payroll
☐ 36. Groupware
☐ 37. Desktop Video Conf.
☐ 38. Document Management
☐ 39. Mapping/GIS
☐ 40. Pen-Based Applications
☐ 41. Other__________ (please specify)

Systems Management
☐ 43. Operating Systems
☐ 44. Utilities
☐ 45. Applications Development
☐ 46. CASE
☐ 47. Programming Languages
☐ 48. Compilers
☐ 49. SQL Applications
☐ 50. Client Server Applications
☐ 51. Other__________ (please specify)

99.☐ None of the above

8 If you indicated purchasing involvement for computers, computer products or services in Question 7A or Question 7B, for how many Macintoshes do you have this involvement?

(Select one only) Write Answer Here ➡ ☐

01. 2000+	03. 500-999	05. 50-99	07. 10-19	09. 1-4
02. 1000-1999	04. 100-499	06. 20-49	08. 5-9	99. None

9 For what applications are the Macintoshes at your location used? (Check all that apply)

☐ 01. Graphic Arts
☐ 02. Presentation Graphics
☐ 03. Multimedia
☐ 04. Design/Engineering
☐ 05. Business Applications
☐ 06. Systems Management
☐ 99. Other__________ (please specify)

10 Over the course of one year, do you specify, recommend, buy, or approve the purchase of host systems, desktops, networking products, peripheral equipment and/or software worth: (Write number in box)

1. $5,000,000 or more	5. $400,000 to $599,999	9. $25,000 to $49,999
2. $2,500,000 to $4,999,999	6. $200,000 to $399,999	10. $10,000 to $24,999
3. $1,000,000 to $2,499,999	7. $100,000 to $199,999	11. Less than $10,000
4. $600,000 to $999,999	8. $50,000 to $99,999	99. None

Product Category	For this location (Write number in box)	For other locations (Write number in box)
Host Systems (Mainframes/Minis)	A. ☐	G. ☐
Desktops/Portables (Micros/Workstations)	B. ☐	H. ☐
Networking Products (include Servers)	C. ☐	I. ☐
Peripheral Equipment	D. ☐	J. ☐
Software Products	E. ☐	K. ☐
Service/Support	F. ☐	L. ☐

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MacWEEK

01.08.96 VOLUME 10 NUMBER 1

4 UP FRONT

NEC debuts compact LCD displays • SyQuest SyJet packs 650-Mbyte, 1.3-Gbyte removable cartridges • Coolscan turns II

6 NEWS

Show Picks: Macworld exposed • Symantec unveils updated utilities • Vendors uncork Ultra SCSI speeds • ON Location serves up net data • The latest Jaz arrangements

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Macromedia enters image-editing picture • Opcode tunes up Studio Vision Pro • Infini-D gets in step with QuickDraw 3D

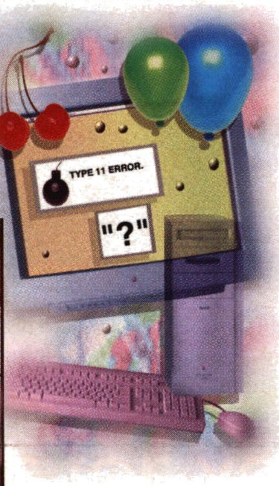
33 GATEWAYS

STFMail debuts at expo • PowerBuilder for Mac ships • Open Transport update gets the bugs out • FirstClass for Mac to ship in spring

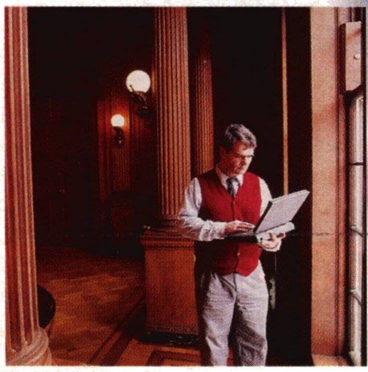
46 SPECIAL REPORT

State of Mac Management: Managers toughed it out in '95 — will the loyalty continue?

Macromedia adds new tools, revamped interface to xRes image editor. See GA, Page 20.



Mac managers got Web fever, but clones left them cold. See Special Report, Page 46.



What the new year will bring for Macs. See MacInTouch, Page 97.

68 SPECIAL REPORT

The Year in Review: While we can't say it was a great year, at least 1995 wasn't boring.

79 REVIEWS

Adobe After Effects 3.0 • Graphsoft MiniCad 6.0 • KPT Final Effects 3.0 • PageMill 1.0 • MacBench 3.0 • Forum • Year in Reviews

97 SOLUTIONS

Although digital cameras are migrating to the photo mainstream, film isn't on its way out.

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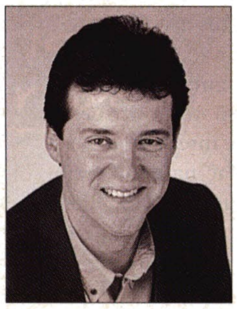
MACWEEK INSIDER JON SWARTZ

The calm before the storm

If it's January, it must be Macworld Expo San Francisco. Four days of products, parties, back-room politics and general chest thumping about all things Mac. The show's venue, Moscone Center, is — to paraphrase a certain $35 million defensive back — Apple's house.

Surely with the Mac big top in town, unit shipments at record levels and a slew of third-party products on the horizon, Apple should be starting the new year with a bang.

But before Mac aficionados get caught up in the revelry and pop open the bubbly, they need to own up to some sobering facts. This week is merely a respite; the next 50 could be crippling.



If anything, the company staggers into 1996, groggy from a long list of troubling ills: the lack of a clear, compelling message; mistakes in forecasting demand; discord in the executive ranks; shrinking margins and profits; the failure of two Apple-IBM Corp. joint ventures, Taligent Inc. and Kaleida Labs Inc.; a projected loss during Apple's traditionally profitable Christmas quarter; and rumored layoffs of up to 2,000 employees.

All this has sent industry observers scrambling to re-evaluate the company's future. Apple stock was downgraded in December by Hambrecht & Quist Inc. of San Francisco and Standard & Poor's Corp. and Moody's Investors Service Inc., both of New York. And analysts are betting the company is a likely takeover target for IBM, Oracle Corp., Hewlett-Packard Co. or Sun Microsystems Inc., among others.

Even as Apple gains ground in home personal computer sales, its profits are anemic. The company supposedly is focused on gaining market share — and it registered a modest gain last year, according to Dataquest Inc. of San Jose, Calif. But it also misread demand so badly that in mid-1995 it had a backlog of orders topping $1 billion. (That figure has since been cut to $600 million.)

All the while, Apple public relations has adopted a bunker mentality with mantralike chants of "No comment, no comment."

All this prompts the question: Can Apple withstand the next 12 months? Of course it can. But first it needs to face cold, hard reality and get its executive house in order. Although Apple has innovative technology, customers, brand name and cash, company morale and managerial talent seem to have dropped to an all-time low. There have been two reorganizations within eight months, and four senior executives have departed. Compare that with the relatively stable management teams at Microsoft Corp., Compaq Computer Corp. and Gateway 2000 Inc.

This week is merely a respite from Apple's woes; the next 50 could be crippling.

Ideas on how to fix Apple's problems are hard to come by. Based on interviews with developers and analysts, I think Apple needs to take advantage of its considerable name recognition in the home market and broaden its distribution strategies to increase market share; beef up support for third-party software development; and continue technical innovation, particularly in Power Macs, Copland, OpenDoc and Internet-related products.

Others suggest Apple should buy another big company, such as the former NCR Corp., and thus force its way into the corporate market. A vocal minority recommends the hiring of a managerial superstar — Compaq's Eckhard Pfeiffer or Intel Corp.'s Andy Grove — but such people already have good jobs and show little sign of looking for employment opportunities.

Apple faces a challenging year, but it's had uphill struggles before (remember 1985 and 1990, for instance?). It has always managed to persevere, which it can thank its sterling technology and loyal customers for. But it also needs to change its mind-set from "create the products and then find the customer" to "pick its customers and then create the products."

Otherwise, it could be a long year. □

Jon Swartz is business editor for MacWEEK. He welcomes feedback at jon_swartz @macweek.com.

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NEC debuts LCD displays

Compact monitors are only 6.7" deep

By Joanna Pearlstein

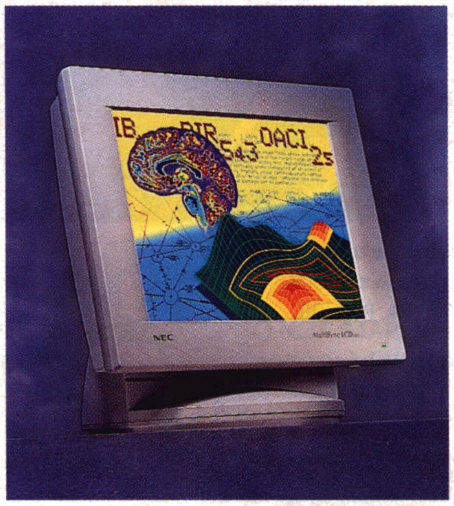
Bringing displays with smaller footprints to the desktop, NEC Technologies Inc. this week will announce two monitors that use active-matrix color LCDs.

The multisynchronous analog displays are smaller, lighter and consume less power than comparable CRT-based monitors. Because of low yields in LCD production, they are also close to 10 times the price of comparable CRT monitors.

LCD monitors are primarily used in situations where space is at a premium. The $3,999 12-inch MultiSync LCD200, due in March, and the $5,999 13-inch MultiSync LCD300, due this month, each weigh 8.8 pounds and are 6.7 inches deep; they consume 30 and 40 watts of power, respectively.

The LCD200 sports a dot pitch of 0.24mm, and the LCD300 has a dot pitch of 0.20mm. The LCD200 supports resolutions of up to 1,024 by 768 pixels, the LCD300 up to 1,280 by 1,024 pixels. The displays are Energy Star- and MPR II-compliant.

"They have used the highest quality LCD display that they could get," said Jon Peddie, president of Jon Peddie Associates, a consulting firm in Tiburon, Calif. "More importantly, they made it behave exactly like a monitor. … That's no small feat."



Slim and trim, NEC Technologies' LCD300 is a 13-inch, LCD-based display that weighs 8.8 pounds and is 6.7 inches deep.

Peddie said the displays' prices are "getting closer to reality." He said increased manufacturing capacity for LCD displays and higher demand could eventually drive prices down.

At the January, 1995, Macworld Expo in San Francisco, NEC announced the LCD 1280, an $11,755 13-inch LCD display that required a Radius graphic card (see MacWEEK, Jan. 16, 1995, Page 7). This year's crop of LCD monitors can use the Mac's built-in video. The LCD 1280 will be phased out when the LCD 300 is released.

NEC Technologies Inc. of Boxborough, Mass., can be reached at (508) 264-8000 or (800) 623-4636; http://www.nec.com. □

SyQuest SyJet drive blasting into future

By David Morgenstern

SyQuest Technology Inc. will give users a peek at SyJet, its next-generation removable hard drive, this week at Macworld Expo.

Expected to ship in the first quarter, the drive will use new dual-platter 3.5-inch cartridges with capacities of 650 Mbytes and 1.3 Gbytes, about 30 percent higher than the media of Iomega Corp.'s forthcoming Jaz drive. SyQuest said the drive is expected to cost $499; the high- and low-capacity cartridges will cost about $95 and $65, respectively.

The company said the new Fast SCSI-2 drive will offer an average access time of about 16 milliseconds and a sustained data transfer rate from 4 to 7 Mbytes per second. It will use a 256-Kbyte RAM buffer.

The SyJet is not backward-compatible with SyQuest's previous 270- and 105-Mbyte media nor with 135-Mbyte cartridges used in its low-end EZ135 drive.

"The specs are good, but SyQuest needs to get the drive out as soon as possible to maintain its market leadership," said Stan Corker, an analyst at International Data Corp. of Framingham, Mass. Corker said Iomega's delays in releasing Jaz drives in volume afford a break to SyQuest. "The company has a lot of incumbent users to leverage. The door is still open, but the window will close quickly when the Jaz ships."

SyQuest Technology Inc. of Fremont, Calif., can be reached at (510) 226-4000 or (800) 245-2278; fax (510) 226-4102; http://www.syquest.com. □

Tektronix phases in new printer

By David Morgenstern

Tektronix Inc. this week at Macworld Expo will release a new Phaser 550 color laser printer that uses a next-generation Matsushita engine, a speedier controller and longer-lasting consumables.

The new $6,995 printer is externally identical to the $8,995 Phaser 540, which was introduced a year ago.

The 550 uses a 32-MHz AMD RISC processor and comes with 8 Mbytes of RAM, which provides 600-dpi resolution. It has print speeds of 3.5 and 14 pages per minute for CMYK color and black-and-white output, respectively; a special CMY mode boosts color speed to 5 ppm, Tektronix said.

A $1,195 16-Mbyte RAM card and an $800 firmware upgrade let the printer offer 1,200-by-1,200-dpi resolution. The 550 can output 1,200-dpi color and monochrome pages at 1.8 and 7 ppm, respectively.

The firmware upgrade also enables several utility functions, including job collation.

The 550 uses a PostScript Level 2 interpreter and supports ColorSync 2.0, Pantone and TekColor color-management systems. It comes with parallel and SCSI ports; an Ethernet card is $595. The device ships with a 750-sheet input tray.

Tektronix Inc. of Wilsonville, Ore., is at (503) 682-7377 or (800) 835-6100; fax-back (503) 682-7450; http://www.tek.com. □

Nikon to show Coolscan II

By Kristin Balleisen

Nikon Inc. will test drive its latest slide scanner for entry-level users at Macworld Expo this week.

Due in mid-February, the 24-bit Coolscan II LS-20 will have an estimated $1,195 street price. It is a single-pass RGB scanner capable of imaging film at resolutions up to 2,700 dpi; the device is based on the same single CCD (charge-coupled device) linear array as the previous model, the Coolscan LS-10.

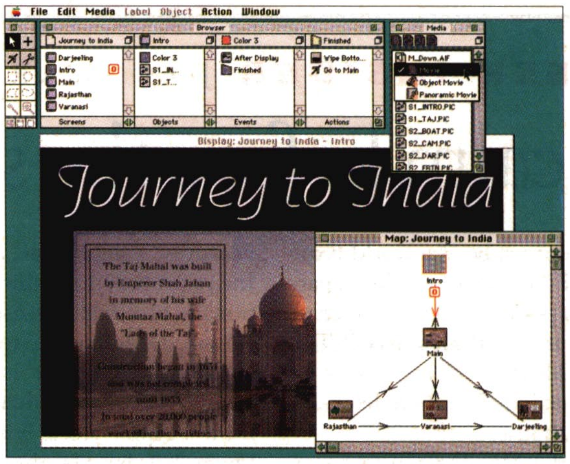
The Coolscan II can scan a 29-Mbyte image in 80 seconds at 2,700 dpi. Nikon said that the new Coolscan processes the signal in analog rather than digital mode for better image quality.

The device can accommodate film up to 23.4mm by 35.4mm.

A feature called phase contrast detection, previously available only in Nikon's higher-end scanners, allows the device to focus in less than five seconds.

The Coolscan II LS-20 boasts a smaller footprint than its predecessor — 5.9 by 10.6 inches — and weighs 4.2 pounds. The device will ship with Nikon Scan image-processing software, which doubles as an Adobe Photoshop plug-in, and Storm Software Inc.'s EasyPhoto image-editing software.

Nikon Inc. of Melville, N.Y., is at (516) 547-4355 or (800) 526-4566; fax (516) 547-0299. □



Users of Version 2.0 of Apple's object-oriented Media Tool will be able to drag and drop media elements, such as QuickTime VR movies, into multimedia applications.

Apple readies Media Tool 2

By Kelly Ryer

Apple plans to ship new versions of its Apple Media Tool and Apple Media Tool Programming Environment this month.

At $495, the object-oriented Media Tool is aimed at nonprogrammers who want to create cross-platform interactive titles. The Power Mac-native Version 2.0 will add support for QuickTime VR, custom color palettes, AppleScript and QuickTime 2.1.

Other new features include drag-and-drop of media elements, a new user interface browser, flip-book animation and sounds with longer durations than just a single screen. Media Tool 2.0 will also be able to create cross-platform run-time titles for the Mac OS and Windows. Upgrades are $149.

The companion application for engineers is the Apple Media Tool Programming Environment. Also Power Mac-native, Version 2.0 will require a subset of Macintosh Programmer's Workshop, which will be included with the $995 software; upgrades are $195. New features include a consolidated class library, dynamic compiling and linking, and faster build times.

A bundle of the Apple Media Tool and the Apple Media Tool Programming Environment is $1,195; bundle upgrades are $295.

APDA is at (800) 282-2732. □

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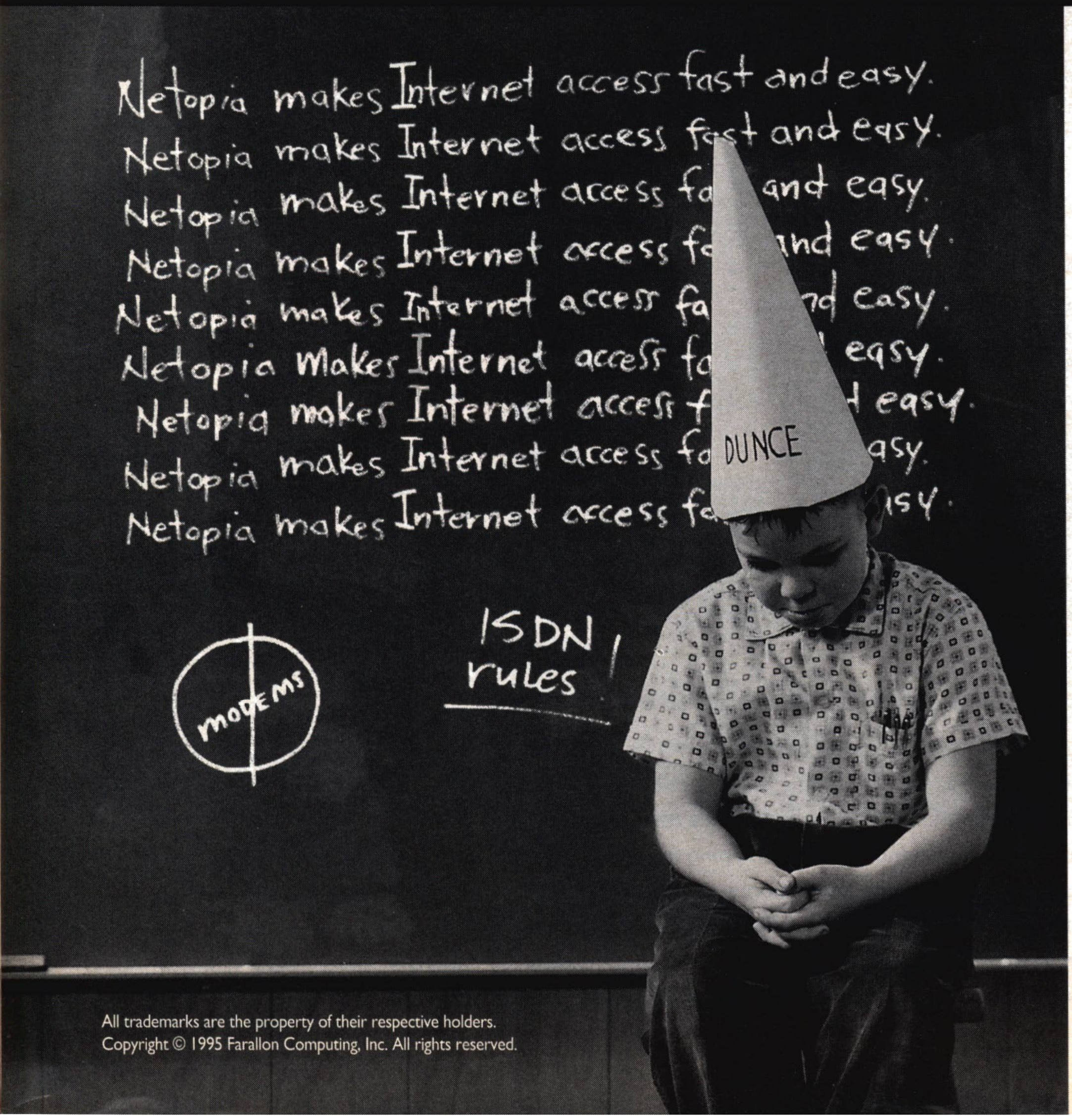
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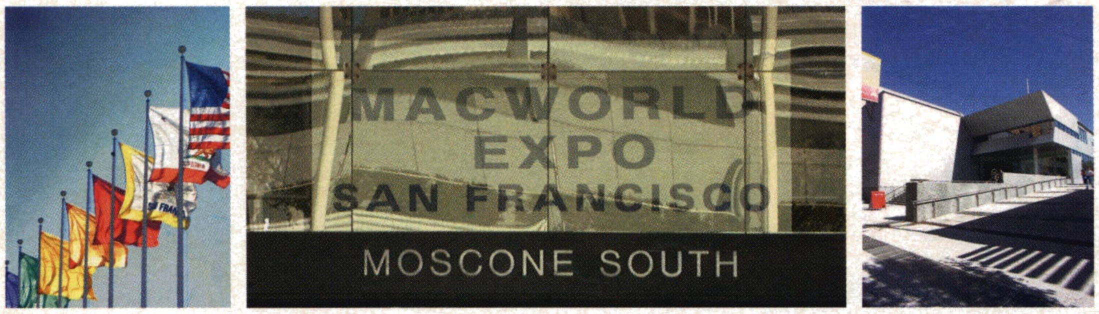


SHOW PICKS

Apple continues to ship record numbers of Macs, and developers keep releasing hundreds of new products and announcing even more. With so much to choose from and so many booths to visit, MacWEEK has come up with a helpful product A-list for attendees to check out while at Macworld Expo this week in San Francisco.

GRAPHICS

Even though we're in the throes of the NFL playoffs, Macworld Expo attendees this week will be jostling each other around monitors to see digital video advances, not touchdowns. Truevision Inc.'s Targa 2000 PCI video digitizing card will turn Pro with a new daughtercard upgrade that adds Betacam compatibility. Meanwhile, Data Translation Inc. will offer Media 100 qx, which bundles a digital video card with Adobe Premiere for less than $5,000. And, getting even cheaper, miro Computer Products Inc. will introduce miromotion DC20, a $1,199 digital video card bundled with Premiere. On the video software frontier, Premiere itself has turned 4.2, with new CD-ROM production features, and Avid Technology Inc. will showcase an upcoming version of its VideoShop software, which will include edit-decision lists.

As always, snazzy designs and cool colors will predominate at graphics applications demonstrations. Adobe will ship Illustrator 6.0 at the show; Deneba Software will still be showing Canvas 5.0. When it ships (by March) the package will have support for multiprocessing and QuickDraw 3D. Not to be outdone, Macromedia Inc. will show off FreeHand 5.5 and xRes 2.0. Improved image handling for large files and support for Web graphics formats top the list of new xRes features.

Meanwhile, Live Picture Inc. will demonstrate Version 2.5 of its image-processing application Live Picture, formerly distributed by MetaTools Inc. The update packs import and export of EPS files, support for Apple's ColorSync 2.0, and better alpha-channel controls.

Headlining at the Fractal Design Corp. booth will be Painter 4, which shipped in November, adding a PostScript drawing layer and mosaic tile painting.

In the 3-D space, Ray Dream Inc. will add animation and clip models to its 3-D tools with its $499 Ray Dream Studio. Elsewhere on the floor, Apple will draw spectators to its PCI-based QuickDraw 3D Accelerator Card. Lining up to support QuickDraw 3D will be Microspot USA Inc.'s 3D World and Specular's new Infini-D 3.1. Specular will also ship Version 2.0 of its LogoMotion package.

Matrox Graphics Inc. is shipping its MGA Millennium board, which accelerates QuickDraw 3D as well as 2-D graphics.

Multimedia producers will want to get a look at mTropolis 1.0, the multimedia-authoring tool now shipping from mFactory Inc.

Setting the tempo for audio, Opcode Systems Inc. will exhibit Studio Vision Pro 3.0 in Apple's booth. The MIDI sequencing software adds integrated digital audio recording and can convert data from audio to MIDI and back.

InVision Interactive Inc. will add to the show floor noise with its new CyberSound VS software-only synthesizer and its 500-plus sounds. Plug-ins from InVision are among those that now work with Macromedia's newest incarnation of SoundEdit 16. Version 2 of the digital audio recording and editing package adds compression enhancements and batching controls.

CPUs

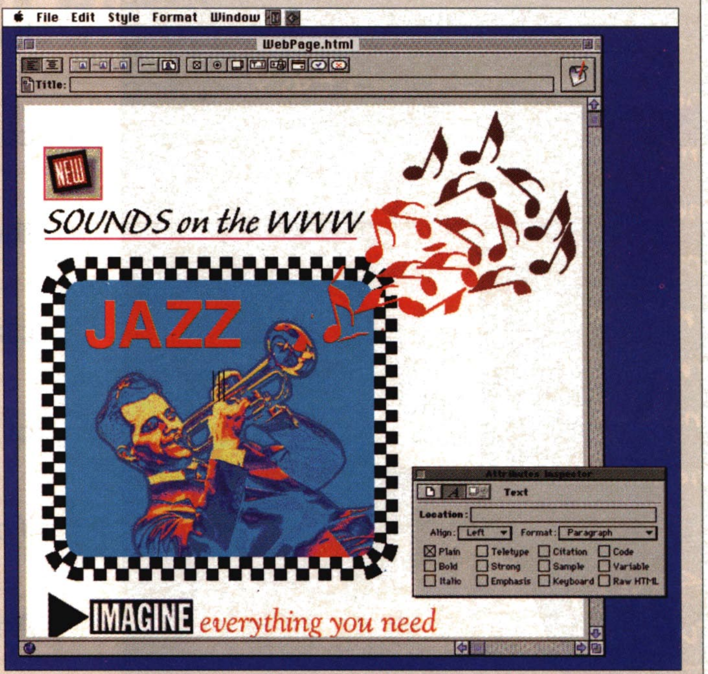
It probably won't be the last time this happens, but the newest Macintoshes at Macworld Expo won't be from Apple. Power Computing Corp. will show off its new lower-end PowerCurve series, which features the 120-MHz PowerPC 601 processor. Expect to shell out about $1,700 for a model that includes 8 Mbytes of RAM, an 850-Mbyte hard drive and quadruple-speed CD-ROM drive. In addition, Power Computing will show the PowerWave series, the 120-, 132- and 150-MHz 604-based machines that can use both NuBus and PCI cards. Those machines cost between $3,199 for a base 120-MHz model and $5,499 for a loaded 150-MHz model.

Also on display at expo will be DayStar Digital Inc.'s Genesis MP, the first multiprocessor Mac clone. The $24,999 six-slot version of the Genesis MP will be on hand at DayStar's booth.

Apple's booth won't be empty. It will have its new PowerPC 603e-based PowerBook 5300 series and PowerBook Duo 2300, as well as the new 33-MHz 68LC040-based PowerBook 190. The desktop user will find Apple's PCI Macintoshes: the 75- or 90-MHz PowerPC 601-based Power Macintosh 7200; the 100-MHz 601-based 7500; the 120-MHz 604-powered 8500; and the 120- or 132-MHz PowerPC 604-based 9500.

Performa fans can see Apple's 100-MHz PowerPC 603-based Performa 6300, as well as the 75-MHz 603-based Performa 5200 and 6200. Apple will also demonstrate its newest DOS Compatibility card, a PCI card with a Pentium processor.

A DYNAMIC DUO



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Adobe Systems Inc. will showcase synergy between Illustrator 6.0 and PageMill. The Illustrator 6.0 upgrade, shipping at the show, lets users drag and drop images into PageMill, the company's newly acquired Web authoring tool, also shipping now. Illustrator 6 also offers Drag and Drop with Photoshop; support for TIFF, PICT, GIF and Portable Document Format; and Adobe's new API for plug-ins. The new version also boasts built-in color separation, the capability to place patterns on a path, and new tools and palettes.

MOBILE

Mac users on the go will have a flock of PowerBook products to evaluate at the expo. PowerBook 500-series owners seeking a PowerPC speed bump should stroll by Newer Technology Inc.'s booth, where the company will be showing a daughtercard boasting a 117-MHz PowerPC 603e processor. Also on hand at Newer's booth will be the ColorPalette, a $275 16-bit color video card for the PowerBook 190 and 5300 series, as well as the Newer Floppy MicroDock, a minidock for the PowerBook Duos.

Show goers will get a charge from Battery Technology Inc.'s new $99 external battery charger, the MC-SC 1950. VST Technologies is unveiling several new products for the new PowerBook 190 and 5300 series: the VST Expansion Bay Hard Drives, some internal batteries for the new PowerBooks, as well as the AIRplex Mac, VST's wireless 14.4-Kbps fax modem.

PowerBook users seeking modems for their PC Card slots will find vendors have swarmed the Mac market with new offerings. Among those vendors are Best Data Products Inc., Global Village Communication Inc., Megahertz Corp. and Viking Components Inc. Megahertz will also show its new AllPoints wireless PC Card.

You'll have to go to Apple's booth to find AirGo Communications Inc., a subsidiary of Dayna Communications Inc. AirGo will display the AirGo Phone System, which combines a cellular phone and a 14.4-Kbps fax modem on a PC Card. The PC Card can be placed in a PowerBook for use as a fax modem or in the cellular phone handset for use as a cellular phone.

GATEWAYS

Macintosh networking companies promise to speed things up at this year's expo. Sonic Systems Inc. will usher in a family of Fast Ethernet devices, including dual-speed 10/100BASE T cards for NuBus and PCI Macs, an eight-port 100-Mbps Ethernet hub, and an Ethernet-to-Fast Ethernet bridge. Asanté Technologies Inc. will spotlight its Fast Ethernet products and ship Ethernet PC Cards and communications slot cards. Dayna will add to its BlueStreak line with a Fast Ethernet

See Show Picks, Page 8

After failing to program his VCR for the last time, Tiny welcomed the simplicity of his HP ScanJet scanner.

Introducing the HP ScanJet 4c

From set up to start up, from software installation to image capture, the HP ScanJet 4c makes the whole scanning process easier. 2400-dpi enhanced resolution (600-dpi optical), internal 30-bit color, and 1,024 levels of gray produce documents that are rich, detailed, and impactful. The HP ScanJet 4c also includes image-editing software, OCR software for text recognition, and new software for electronic file distribution and management. For more information, call 1-800-SCANJET, Ext. 1022†

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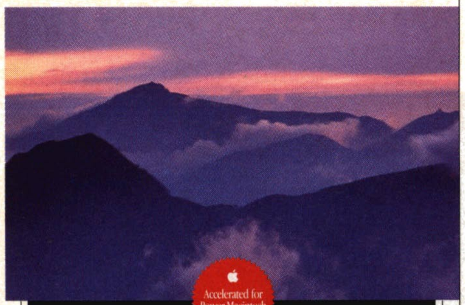

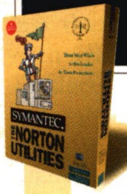

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MacUser August 1995

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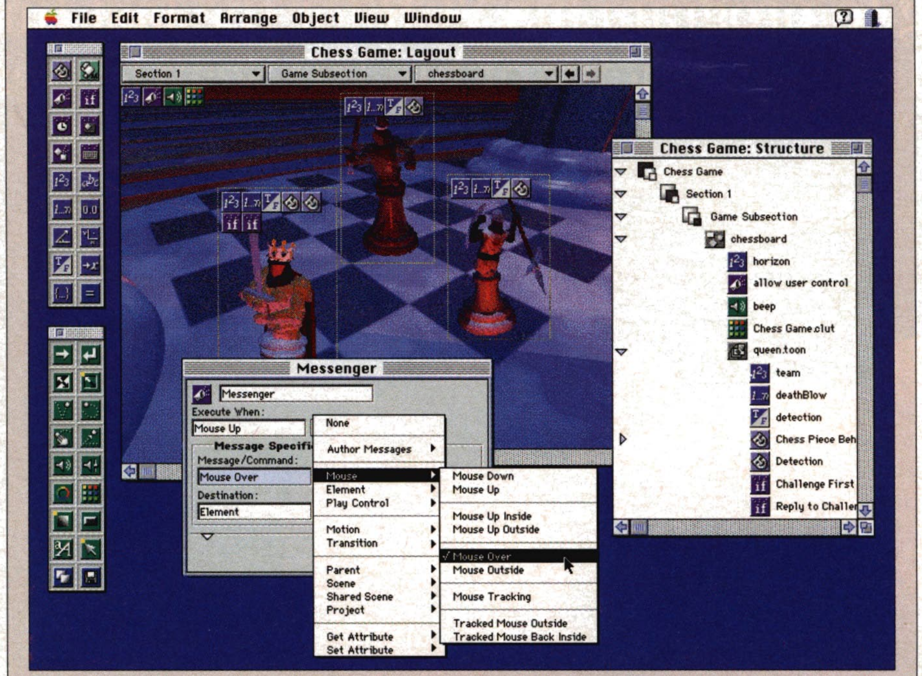
MTROPOLIS MULTIMEDIA TOOL SHIPS



Newly shipping is mTropolis 1.0, the object-oriented multimedia-authoring tool from mFactory Inc. The $4,995 mTropolis creates multimedia projects such as this interactive game, where the chess pieces battle hand-to-hand with swords.

Show Picks

From Page 6

bridge and 10/100BASE T LC card.

On the ISDN (Integrated Services Digital Network) front, Farallon Computing Inc. will unveil a single-user ISDN addition to its Netopia family of Internet devices. The company will also demonstrate its recent update to Timbuktu Pro.

After years of waiting, Mac database developers will finally get their mitts on the shipping version of PowerBuilder for Mac. Powersoft Corp. plans to show off the popular database application-development tool.

Claris Corp. plans to make a big to-do over its recently released and much-anticipated update to FileMaker Pro, which now goes from flat-file to relational. The $199 FileMaker 3.0 upgrade comes with 40 predefined templates.

ProVUE Development Corp. is crossing its fingers that the relational version of its own database, Panorama, will be ready by show time. EveryWare Development Corp. will present an Open Database Connectivity version of Tango — its graphical development tool for integrating the company's Butler SQL database with StarNine Technologies Inc.'s WebStar Web server — and Bolero, EveryWare's upcoming application for logging information from WebStar into any database.

STF Technologies Inc. will show a new version of FaxSTF, as well as its new STF-Mail PowerTalk client, and FaxSTF Network Edition, a network fax system. Supra Corp. will tout a new version of its fax software, FAXcilitate 2.0.

A new domain name server (DNS) will be among several new products and upgrades making appearances at InterCon Systems Corp.'s booth. Along with InterServer DNS, the company will show updates to TCP/Connect II, InterServer Publisher and NFS/Share.

PRODUCTIVITY

OCR technology gets sharper at this expo as Caere Corp. launches OmniPage Pro 6.0 for Macintosh, a major update of its OCR software. The $499 native Power Mac program features OmniPage Guide, which incorporates Apple Guide to provide interactive assistance to users, and True Page technology, which maintains the original format of scanned pages. Xerox Corp. will unveil its TextBridge Professional 3.0 OCR software that offers improved page-segmentation and document-recomposition capabilities.

WorldSoft U.S. will show its recently shipped WorldWrite 3.0 word processor. The $99 WorldScript-savvy application will be bundled in a number of Apple's foreign-language software kits.

Accounting enthusiasts need look no further than Intuit Inc.'s QuickBooks 4.0 and QuickBooks Pro 4.0. The upgrades, which feature a new customizable interface and integrated business-management capabilities, are priced at $119 and $189, respectively. At the same time, Peachtree Software Inc. will demonstrate an electronic bill-payment system of Peachtree Accounting for Macintosh. The system is scheduled to ship in the first quarter of 1996. BestWare will showcase M.Y.O.B. Accounting 6.0 for Mac, a $69 update that includes a report customizer, job-management functions and help guides.

Capitalist and entrepreneur alert! Big Software Inc. will have Big Business 2.0 ready for investment. The new package adds enhanced features for Internet access, security and international use. It is priced from $379 (one user) to $1,999 (10 users).

For the statistically minded, Spreadware will demonstrate Version 4.0 of Spreadware Statistics Menu. The new version of the spreadsheet, priced at $229, includes new charts such as Dot Plot, X-bar, R chart and Pareto chart.

Micro Planning International Inc. is showing Micro Planner X-Pert 2.4 and Micro Planner Manager 1.4, which now include selective archiving, schedule analysis options and faster launch times. The programs are $1,995 and $695, respectively.

PERIPHERALS

Attendees chilled from winter can find warm tones from several new color laser printers. Tektronix Inc. will debut its Phaser 550, which will raise color laser's resolution ceiling to 1,200 by 1,200 dpi. Users can also check out Digital Equipment Corp.'s 600-dpi Colorwriter LSR 2000; it's on display in several booths, including Adobe's. The printer uses a 100-MHz Fiery XJE controller that has many features found in Electronics for Imaging Inc.'s stand-alone RIPs.

CalComp will widen color options with three GT-series plotters that provide 360-dpi CMYK color and 720-dpi black-and-white output. The models will include the 24-inch 5324 GT, the 36-inch 5336 GT and the 36-inch 5336 GT/PS, which comes with an internal PostScript Level 2-compatible RIP.

SyQuest Technology Inc. will introduce its SyJet drive, the company's answer to Iomega Corp.'s Jaz removable storage drive. Slated to ship by the second quarter, the SyJet will use 650-Mbyte and 1.3-Gbyte cartridges. Users will find Jaz internal drives and arrays in the MicroNet Technology Inc. and ProMax Technology Inc. booths.

Pushing the boundaries of SCSI performance, a number of vendors will introduce Wide Ultra SCSI cards and devices for PCI-based Macs. Adaptec Inc. has a new dual-channel Wide Ultra PCI card as well as an Ultra software enabler for its PowerDomain Fast and Wide SCSI-2 card.

ATTO Technology Inc. will demonstrate Wide Ultra versions of its Express-PCI cards as well as its Ultra-based Silicon-Disk II, the next-generation of the company's RAM-based solid-state drives.

FWB Inc. will take the wraps off its UltraSCSI JackHammer PCI card and a new line of Wide Ultra SledgeHammer RAID systems offering capacities from 2 to 24 Gbytes. ProMax will also show its forthcoming line of Ultra arrays.

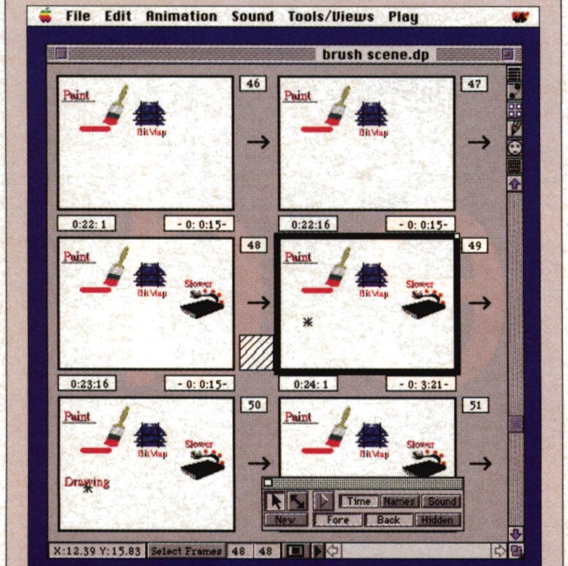
Sony Corp. of America and Panasonic Communications & Systems Co. will unveil new CD-Recordable systems.

Attendees on the lookout for new scanners will find both high- and low-end devices. Agfa, a division of Bayer Corp., will debut its new Horizon Ultra scanner, which replaces the Horizon Plus. Linotype-Hell Co. will show Opal, a new $9,900, large-format flatbed scanner. It will use a dual-lens technology that can scan up to 12-by-17-inch images at a resolution of 400 by 800 dpi and 6-by-17-inch images at up to 800 by 1,600 dpi.

Nikon Inc. will show its entry-level CoolScan II LS-20 slide scanner that will offer 2,700-dpi resolution. Storm Technologies will debut its $249 EasyPhoto 600-dpi color scanner package.

Users with deep pockets can take out

ANIMATED WEB PAGES



DeltaPoint Inc.'s WebVision Animator will let users build small multimedia files that play back on the Web through a Netscape Navigator plug-in. Authors will be able to synchronize sound to the action, interlace video files and create interactive buttons — all without programming. Thirty seconds of WebVision animation is expected to be as little as 1.5 Kbytes in size.

their checkbooks for the latest LCD monitors at the NEC Technologies Inc. booth. NEC's LCD 200 and LCD 300 are 12- and 13-inch multisynchronous displays and cost $3,999 and $5,999, respectively.

Attendees can put their fingers on three new input devices from Datadesk International Inc. It will unveil a keyboard with a built-in trackpad; a stand-alone trackball; and Lil'BigBoard, a small-footprint keyboard with features of an expanded model.

INTERNET

A menagerie of tools for getting into and getting noticed on the Internet will be at the expo, including PageMill, the HTML editor now in Adobe's hands, and SiteMill, the Web site-management tool acquired at the same time. SiteMill, which includes PageMill, will allow users to manage hyperlinks between Web pages. It will ship this month.

DeltaPoint Inc. will make its foray into the Internet realm with WebVision Animator, a multimedia authoring program and Netscape Navigator plug-in designed for animating Web pages.

SoftQuad Inc. will show HoTMetaL Pro 2.0, an HTML editor that has a built-in rules checker that helps Web-page developers conform to HTML 2.0 standards.

Macromedia's Mac version of Shockwave for Director, a new tool for playing interactive movies on the Web, will be demonstrated in the company's booth.

The Apple Internet Servers, which now come with PageMill, will get lots of attention in the Apple booth. But MacDNS, long-awaited from Apple, is still under wraps.

End users can get their hands on the Apple Internet Connection Kit, which shipped in November and includes Netscape Navigator. Developers will be able to pick up a beta of Cyberdog, Apple's OpenDoc-based Internet suite, due to ship in May.

StarNine Technologies Inc. and its parent company, Quarterdeck Inc., will share a booth where StarNine will be showing an Open Transport version of its Web server, WebStar, and Quarterdeck will demo Quarterdeck Mail, which used to be StarNine Mail, which used to be Microsoft Mail for AppleTalk networks.

For users who like freebies, CE Software Inc. will give away WebArranger, its new PIM studded with Internet hooks. WebArranger allows users to search through bookmarks by keyword and organize them within multiple folders. CE will also have QuickMail 3.6 on display. Elsewhere, Aladdin Systems Inc. will demonstrate CyberFinder, a utility to organize and connect Internet bookmarks from the Finder.

Publishing houses eager to get their services up on the Web will get a chance to see Scitex America Corp.'s Internet System 10 Web server solution. Based on an Apple Internet Server 9150, the System 10 increases the provided RAM to 40 Mbytes and comes with NetDog, a native Power Mac application that allows the secure transfer of complete publishing jobs over the Web.

Netcom On-Line Communication Services Inc. and Pipeline will be showing their proprietary Internet clients. Both will be available in the first quarter.

White Pine Software Inc. will demo its color version of Enhanced CU-SeeMe, an Internet-based video teleconferencing system to be released in the first quarter.

While making its Macworld San Francisco debut this week, SoftArc Inc. will unveil a new Mac client and Mac server for its FirstClass e-mail system and a new utility for designing FirstClass forms.

Farallon will feature its Netopia Internet routers. Each unit will support TCP/IP and AppleTalk and have a built-in NT-1 connector with a U interface for connecting to an ISDN line, an EtherWave port, a LocalTalk port, a PC Card slot and an AUI (attachment unit interface) Ethernet port.

UTILITIES

Symantec Corp. will demonstrate two new utilities at its booth this week: an upgrade of DiskLock, its security utility, and an update to the company's font utility, Suitcase. Version 4.0 of DiskLock and DiskLock Administrator, available now, lets administrators set up multiple users on a single machine with unique passwords and levels of access. Symantec's Suitcase 3.0 upgrade, which is due in March, is now Power Mac-native and supports QuickDraw GX fonts.

Kent◆Marsh Ltd. will start the new year with an upgrade to its NightWatch II security utility. NightWatch 2000 will ship at the expo. FileGuard 3.0 and FileGuard Remote 3.0 top ASD Software Inc.'s new product list in the new year. Due to ship this month, the security software upgrade will add a graphical interface, which includes Drag and Drop support. The new version will pack more detailed logs for administrators; the upgrade will also let administrators print all logs and configuration screens.

Attendees will also get a glimpse of the latest in CD-Recordable software. Charis-Mac Engineering Inc. will release its full-featured Discribe 1.0 CD-R authoring software. Network managers can check out Dantz Development Corp.'s $49 CD-R Driver Kit, which supports Sony Corp.'s double-speed CDU920S recorder.

Developers will get to see rival Java development environments from Natural Intelligence Inc., Metrowerks Inc. and Symantec. Programmers will be able to pick up a free beta release of Natural's system, code-named Roaster, at the show or on Natural's Web site.

The expo will also be Symantec's first chance to show off Version 8, Release 4 of its C++ for Power Mac development environment. Microsoft Corp. will show Visual C++ 4.0 for the Mac, which shipped in September. Quasar Knowledge Systems Inc. will demonstrate the newest version of its SmalltalkAgents as well as a pre-release of the native Power Mac version. Allegiant Technologies Inc. will show off a pre-release of its new Marionet, a scripting tool for Internet services. Apple and MacTech Magazine will once again sponsor a 10,000-square-foot space for developers to show off their wares. □

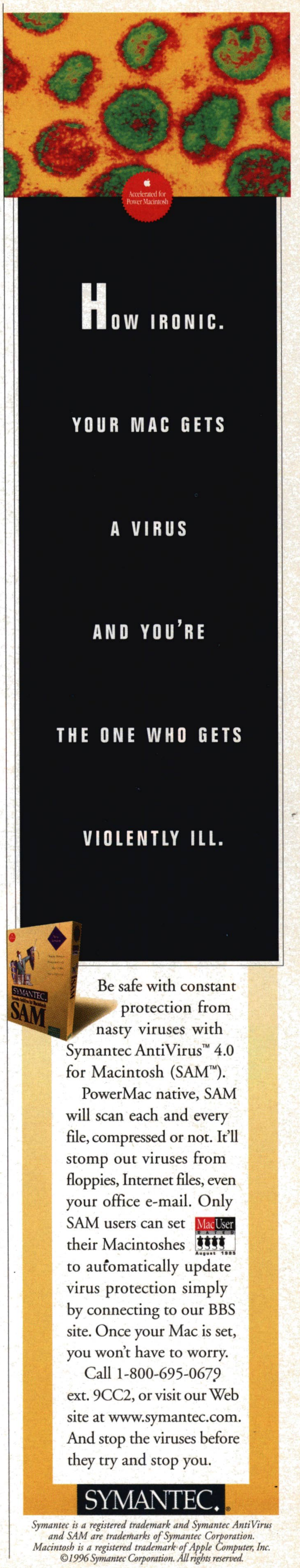
MACWEEK EXPO REPORT

MacWEEK
REPORT
HOT PICKS
Painter integrates vectors, bit maps
Back to the future: It's 1984 in 1995
Plug In to ColorSync 2
A done by any other name
Alams revises Tropix app
MacUser

MacWEEK Report, a special show daily print edition will offer up-to-the-minute news, reviews, tech analyses and commentary. Look for it on the show floor on Tuesday, Wednesday and Thursday.

And, even if you don't make it to San Francisco this week, you can stay up on the news through ZDNet/Mac. The MacWEEK Report as well as late-breaking news stories will be posted in the MacWEEK forums on CompuServe and eWorld and on the Web at http://www.zdnet.com/~macweek/.

For more late-breaking news on expo products, see Page 139.



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AND YOU'RE

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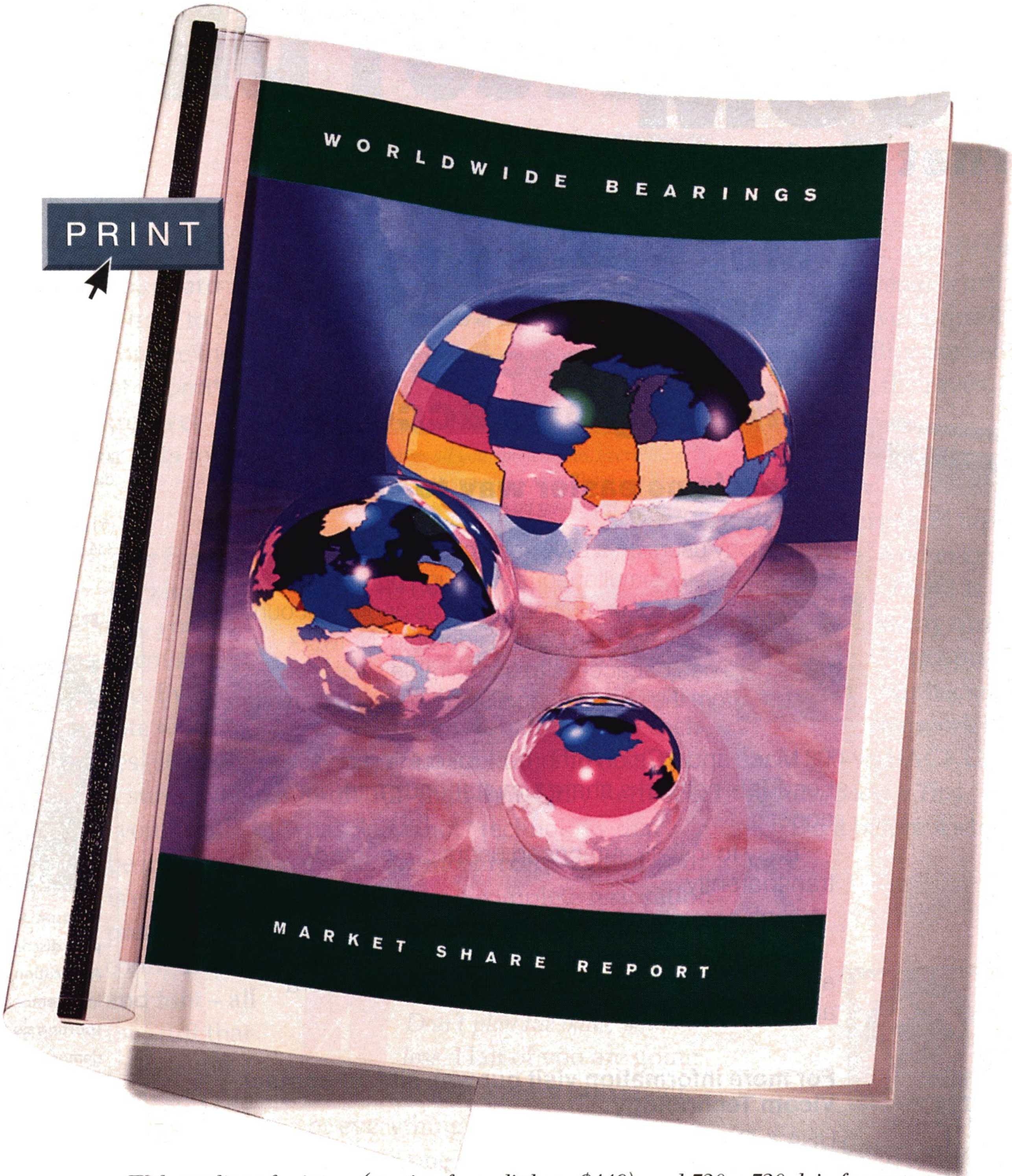

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Symantec to unpack updates at expo

By Kristin Balleisen

Symantec Corp. will show a slew of updated utilities at this week's Macworld Expo San Francisco.

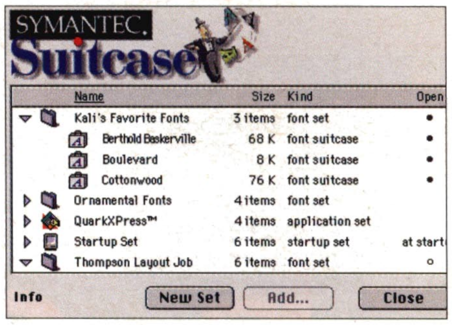
▸ **Suitcase.** The company will unveil an update to its Suitcase font utility that adds Power Mac-native code and scripting support. Slated for a March release, Version 3.0 of the $69.95 utility will be compatible with QuickDraw GX fonts. According to Symantec, users will be able to configure application-specific font sets that open when a program is launched.

Version 3.0 will improve font conflict resolution and feature a new drag-and-drop interface and on-line help, Symantec said. Users of Suitcase 2.x will be able to upgrade for $39.95.

▸ **DiskLock.** Version 4.0 of Symantec's $90 DiskLock and DiskLock Administrator, which recently shipped, adds support for unlimited multiple users on a single machine. The update lets managers set write access to the System folder and offers new password settings, such as character minimums. It also now protects IDE (Integrated Drive Electronics) hard drives and removable drives, including SyQuest and magneto-optical cartridges. Users of Version 3.0 can upgrade for $49.95; a 10-user pack of DiskLock Administrator 4.0 sells for $799.

▸ **SAM.** The company also recently released an update to Symantec AntiVirus for Macintosh that boosts protection for the cross-platform Word 6.0 macro viruses. Version 4.0.7 protects against the DMV and Colors viruses; the previous version handled the Concept and Nuclear viruses. The update is available from on-line services; a disk update is about $20.

Symantec Corp. of Cupertino, Calif., is at (541) 334-6054 or (800) 441-7234; fax (541) 334-7474; http://www.symantec.com. □



Name	Size	Kind	Open
Kali's Favorite Fonts	3 items	font set	●
Berthold Baskerville	68 K	font suitcase	●
Boulevard	8 K	font suitcase	●
Cottonwood	76 K	font suitcase	●
Ornamental Fonts	4 items	font set	
QuarkXPress™	4 items	application set	
Startup Set	6 items	startup set	at start
Thompson Layout Job	6 items	font set	○

Version 3.0 of Symantec's Suitcase font utility will let users create program-specific font sets that load when a program is launched.

SIMPLY ADVANCED COMMUNICATIONS

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Multi-users on a LAN have simultaneous Internet access while sharing one account.

There's no easier way to cut costs

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http://www.vicomtech.com

PROTEST IN TAIWAN

Disgruntled Mac users protested alleged price discrimination outside an Apple Application Exhibition in Taipei, Taiwan, in December. Handing out fliers and sporting slogan-laden T-shirts, the demonstrators said high prices hold back the Mac's acceptance in overseas markets, especially Taiwan. They claimed Apple prices in Taiwan are 20 percent to 30 percent higher than those in the United States, Japan and Hong Kong.

For the record

The Dec. 11 Solutions (Page 63) incorrectly identified MountainGate, a Lockheed Martin Company, of Reno, Nev.

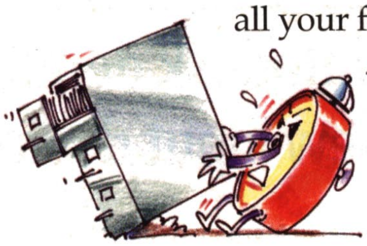
Contrary to the Nov. 13 Storage Beat (Page 8), Plasmon Data Inc.'s Phase-change Dual/CD drive now costs $689.

The difference between backing up and restoring.

Nobody backs up just for fun. You do it for the day your hard drive goes soft and it's time to restore. That's when you see the difference between Retrospect® and the rest. Only Retrospect easily restores all your data to its former glory.

Retrospect saves all your preferences, everything. So you don't have to spend countless hours restoring whatever masterpiece is on your hard drive.

1. *Beware of dragging files.* If you've been "backing up" by dragging files, you'll have an unpleasant discovery when it's time to restore. Even if you've kept up to date with all your files (sure, sure), what you'll still be missing is every preference, configuration, and font – all the stuff that reflects the way you work.

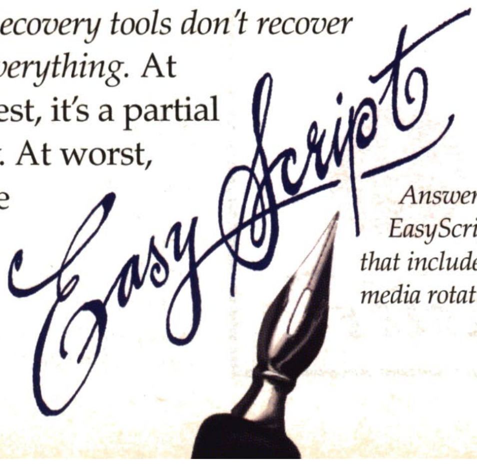


Think about this the next time you're "backing up" by dragging: Retrospect can scan 200 files a second to see which files have changed. Can you?

2. *Recovery tools don't recover everything.* At best, it's a partial recovery. At worst, you have a fire, flood, or theft, and those tools won't recover anything.

3. *Other backup software leaves you exposed.* You're forced to individually restore each incremental backup. The dentist's more fun than that. Only Retrospect has SnapShot™ technology that tracks the most recent state of your hard drive. So complete restoration is accomplished in just one step, in only minutes.

4. *Don't play the odds, you'll lose.* Half of you are going to lose a file, a document, or everything this year. Think about it: one single file could be worth more than Retrospect's entire price tag.



Answer a few questions and Retrospect's new EasyScript™ creates a customized backup strategy that includes backup frequency, scheduling, and media rotation.

5. *The world's foremost restoration artists.* Don't leave yourself wide open to disaster. Buy the software with the awards, the raves, and support for almost every SCSI tape drive ever made. And every Retrospect benefit is multiplied many times over with Retrospect Remote® – our backup answer for network users. Call us at 800-95-BACKUP for our *Top Ten Backup Tips.*

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Ultra SCSI takes off with expo launches

By David Morgenstern

Mac storage will pick up speed at Macworld Expo this week when several vendors take the wraps off Wide Ultra SCSI cards and drives for PCI Macs.

▸ **Adaptec Inc.** will introduce a Mac version of its PowerDomain 3940UW, a dual-channel Wide Ultra PCI card. The $549 card is slated for release in February.

In other news, Adaptec said it recently shipped an Ultra software enabler for its PowerDomain 2940W Fast and Wide SCSI-2 card (see MacWEEK, Nov. 13, 1995, Page 8).

▸ **ATTO Technology Inc.** will unveil Wide Ultra versions of its ExpressPCI series, which are expected in February.

The single- and double-channel models will cost $445 and $945, respectively. A differential version has not yet been priced.

ATTO also recently released its SiliconDisk II, a new RAM-based solid-state drive. Replacing ATTO's SiliconDisk PRO series, the drives come with two sets of Wide Ultra ports that can provide an average data transfer rate of up to 40 Mbytes per second, the company said. The units offer an average access time of 0.02 milliseconds.

The devices come in capacities of 64 Mbytes to 2.4 Gbytes. The 64-Mbyte configuration costs $9,995; an 832-Mbyte model is $81,995.

▸ **FWB Inc.** will debut a new Wide Ultra card and high-performance arrays.

Expected in February, FWB's UltraSCSI JackHammer PCI card will cost about $429. The company's initial card will be a differential model; single- and dual-channel versions with 68-pin connectors are slated for the second quarter, FWB said.

In addition, FWB will display new Wide Ultra models in its SledgeHammer line of RAID systems. The devices will have capacities of 2 to 24 Gbytes. A 2-Gbyte system will cost $2,139; an 8-Gbyte version will be $4,639.

Ultra SCSI is the next-generation version of the SCSI standard. Also known as Fast-20, eight-bit and 16-bit Ultra offer maximum data transfer rates of 20 and 40 Mbytes per second, respectively. Vendors said real-world data transfer performance will depend on the implementation in a particular device, the data block sizes moving over the bus and potential slowdowns from cabling problems.

Adaptec Inc. of Milpitas, Calif., is at (408) 945-8600 or (800) 959-7274; fax-back (408) 957-7150; http://www.adaptec.com.

ATTO Technology Inc. of Amherst, N.Y., can be reached at (716) 691-1999; fax (716) 691-9353; atto@localnet.com.

FWB Inc. of Menlo Park, Calif., is at (415) 833-4616; fax (415) 833-4653; info@fwb.com; http://www.fwb.com. □

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We would like to thank the academy ;-)!!! Thanks to the Editors of MacUser Magazine for awarding Conflict Catcher™3 the 1995 Editors' Choice Award for Best New Utility. Thanks, also, to MacWorld Magazine (Five-Star rating) and MacWeek (Five Diamonds) for recognizing Conflict Catcher™3 as the industry standard for startup file management and conflict identification.

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MERISEL

Datadesk debuts new input devices

By David Morgenstern

Putting users in touch with their data, Datadesk this week will debut three new models in its line of input devices. The units are expected to ship in February, the company said.

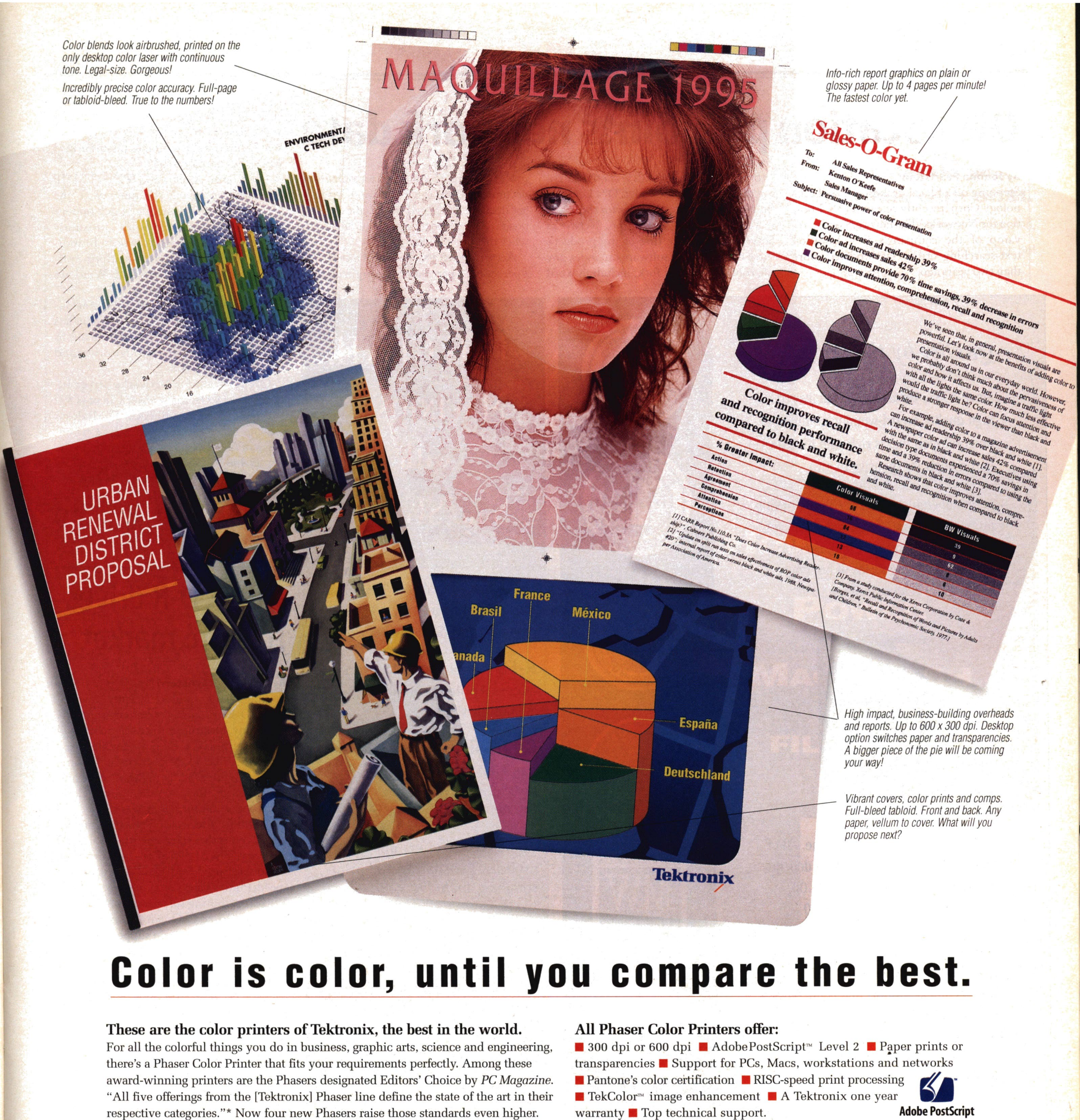
Similar in size to Datadesk's 15-by-5.5-inch TrackBoard, the new TouchBoard includes a built-in touchpad instead of a touchball. The street price of the keyboard is expected to be about $109.

The company will also introduce Lil'BigBoard, a keyboard that integrates a numeric keypad. The board will have a street price of about $79, Datadesk said.

Both new keyboards will offer a row of colored function keys and ship with a set of multicolor key tops that can be used on the Command, Control, Enter and Option keys.

Datadesk will also show TurboBall, a new stand-alone trackball priced at about $49.

Datadesk of Bainbridge Island, Wash., is at (206) 842-5480 or (800) 994-6788; fax (206) 842-9219; datadesk@aol.com. □



Color blends look airbrushed, printed on the only desktop color laser with continuous tone. Legal-size. Gorgeous!

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To: All Sales Representatives
From: Kenton O'Keefe
Sales Manager
Subject: Persuasive power of color presentation

- 🟥 Color increases ad readership 39%
- ■ Color ad increases sales 42%
- 🟥 Color documents provide 70% time savings, 39% decrease in errors
- 🟪 Color improves attention, comprehension, recall and recognition

We've seen that, in general, presentation visuals are powerful. Let's look now at the benefits of adding color to presentation visuals.

Color is all around us in our everyday world. However, we probably don't think much about the pervasiveness of color and how it affects us. But, imagine a traffic light with all the lights the same color. How much less effective would the traffic light be? Color can focus attention and produce a stronger response in the viewer than black and white.

For example, adding color to a magazine advertisement can increase ad readership 39% over black and white [1]. A newspaper color ad can increase sales 42% compared with the same as in black and white [2]. Executives using decision type documents experienced a 70% savings in time and a 39% reduction in errors compared to using the same documents in black and white [3].

Research shows that color improves attention, comprehension, recall and recognition when compared to black and white.

Color improves recall and recognition performance compared to black and white.

% Greater Impact:	Color Visuals	BW Visuals
Action	56	39
Retention	16	9
Agreement	84	62
Comprehension	[illegible]	8
Attention	13	6
Perceptions	18	10

[1] CARR Report No.110.3A "Does Color Increase Advertising Readership?", Cahners Publishing Co.
[2] "Update on split run tests on sales effectiveness of ROP color ads #20"; internal report of color versus black and white ads, 1988, Newspaper Association of America.
[3] From a study conducted for the Xerox Corporation by Case & Company. Xerox Public Information Center. [Borges, et al, "Recall and Recognition of Words and Pictures by Adults and Children," Bulletin of the Psychonomic Society, 1977.]

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🟥 300 dpi or 600 dpi 🟥 AdobePostScript™ Level 2 🟥 Paper prints or transparencies 🟥 Support for PCs, Macs, workstations and networks 🟥 Pantone's color certification 🟥 RISC-speed print processing 🟥 TekColor™ image enhancement 🟥 A Tektronix one year warranty 🟥 Top technical support.

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*PC Magazine, Nov. 22, 1994, Annual Printer Review.

ON Location pinpoints network data

By Joanna Pearlstein

Stepping off of local desktops, ON Technology Corp. recently released ON Location for Networks. The new version is a revamp of the company's ON Location text-searching utility, last updated more than two years ago.

Building on the previous version's searching capabilities for local files, ON Location for Networks creates an index for the text in server-based files using the Networks Server Indexer, the first of the product's three modules. The software can index any file containing a text fork, including word processing, graphics and desktop publishing documents. Users can set the module to target documents created by specific applications as well as update indexes automatically when the server is idle.

According to ON, the size of indexes are 3 percent to 5 percent of the originals' total sizes. The software is compatible with network security functions and will not present secured information to unauthorized users, the company said.

Users on an AppleTalk, IPX or TCP/IP network can search the index with the Viewer Client module. Its search options include Boolean operators, proximity matching and the roots of words. In addition to the Mac, the cross-platform software supports Windows 3.1, Windows NT and Windows 95 systems.

Providing the functions of the previous stand-alone version, an Indexer Client lets users create custom indexes for local files as well as for removable cartridge drives and CD-ROMs, ON said.

ON Location for Networks Server Indexer costs $999; the Viewer Client is $99 per user or $490 for a 10-pack. The Indexer Clients retail for $99 per user. Current users of ON Location can upgrade to the Server Indexer for $299; a 10-user pack of both clients costs an additional $299.

ON Technology Corp. of Cambridge, Mass., can be reached at (617) 374-1400 or (800) 767-6683; fax (617) 374-1433; info@on.com; http://www.on.com. □

New CD-R drives roll into market

By David Morgenstern

Several storage vendors recently unveiled new CD-Recordable systems and software.

▸ **Sony Electronics Inc.** this week will introduce Spressa, its new double-speed recorder. The $1,895 system will come standard with a 1-Mbyte RAM cache and CD Creator for the Macintosh, Corel Corp.'s new authoring software.

▸ **Philips Electronics North America Corp.** recently released its CDD2000 recorder. The $1,395 SCSI-2 unit records at double speed and plays at quadruple speed, Philips said. The system comes with Vulkan authoring software from Aachen, Germany-based CeQuadrat GmbH.

Philips said the system supports Hierarchical File System, CD-ROM XA, CD Bridge, digital audio and Video CD formats. It offers multisession, incremental-packet, track-at-once and disc-at-once writing methods.

▸ **Ricoh Corp.** recently pulled the rug out from under the price of its RS-1060C CD-R recorder. Previously priced at $2,495, the system now sports a $1,295 price tag. It ships with Incat Systems Software Inc.'s CD Workshop software.

Sony Electronics Inc. of San Jose, Calif., can be reached at (408) 432-1600 or (800) 352-7669; http://cons3.sel.sony.com/SEL/ccpg/index.html.

Philips Electronics North America Corp. of San Jose can be reached at (408) 453-5129 or (800) 235-7373; fax (408) 453-0680; http://www.pps.philips.com.

Ricoh Corp., Peripheral Products Division, of San Jose can be reached at (408) 432-8800, Ext. 5326, or (800) 955-3453; fax (408) 432-9266. □

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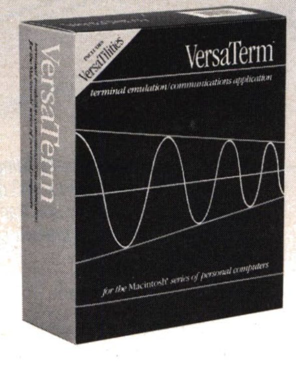
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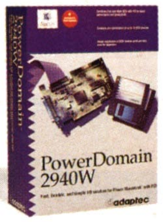

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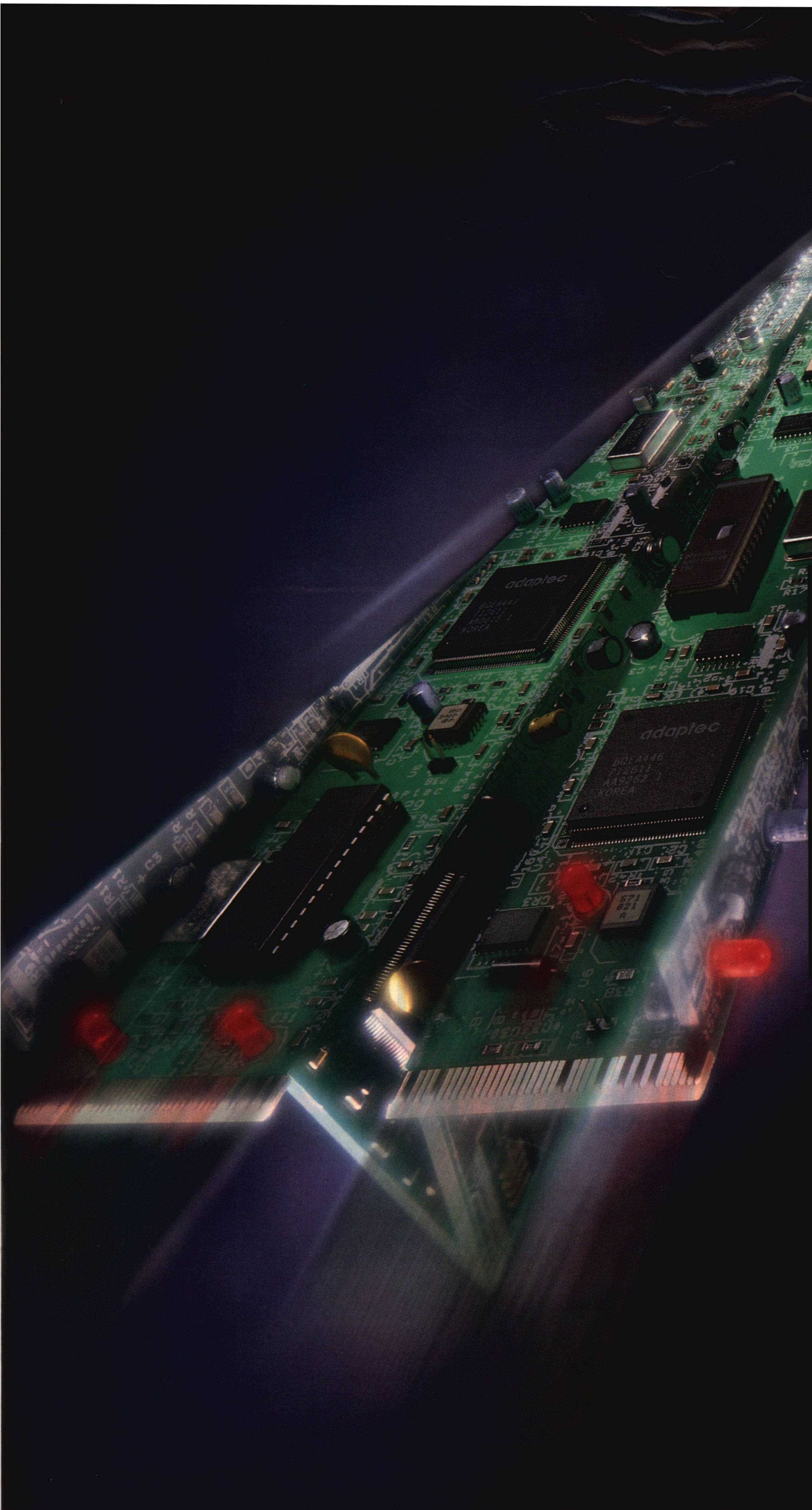

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New arrays from Jaz ensembles

By David Morgenstern

A pair of vendors this month rolled out new arrays and drives based on Iomega Corp.'s Jaz removable cartridge mechanism.

▸ **MicroNet Technology Inc.** released Array2000J, a two-drive array. The $1,275 unit has a capacity of 2 Gbytes and 1 Gbyte when used with sets of 1-Gbyte and 540-Mbyte media, respectively. Each drive can also be used separately.

The array uses a version of the company's MicroRaven RAID software controller that offers data mirroring and striping. The software tracks cartridges and lets users identify cartridges in a batch operation, MicroNet said.

According to the company, a striped array can have a sustained data transfer rate as high as 5.3 Mbytes per second. The 4-inch-high Array2000J enclosure has a 10-by-5-inch footprint. It comes with two 1-Gbyte cartridges.

In addition, MicroNet released a $625 Jaz module for the company's DataDock storage system (see MacWEEK, May 8, 1995, Page 4). It also shipped a $550 internal Jaz drive for the Quadra 800 series and Power Mac 8100, 8500 and 9500 models.

▸ **ProMax Technology Inc.** recently delivered new two- and four-bay Jaz arrays. The $1,395 2-Gbyte PR-2000 array uses two Jaz drives and offers a sustained data transfer rate of 7.6 Mbytes per second.

The $2,595 four-drive PR4-4000 system has a 4-Gbyte capacity and provides a sustained data transfer rate of about 9.2 Mbytes per second, the company said.

The arrays use a Trillium software controller that provides RAID mirroring and striping capabilities.

ProMax also shipped an internal Jaz drive that costs $545.

MicroNet Technology Inc. of Irvine, Calif., can be reached at (714) 453-6100; fax (714) 453-6101; http://www.micronet.com.

ProMax Technology Inc. of Irvine is at (714) 727-3977 or (800) 977-6629; fax (714) 727-3546; promactec@aol.com; http://www.scsidisk.com. □

New 17-inch displays released

Several vendors recently released new mid-size monitors.

▸ **Sampo Technology Inc.** shipped the AlphaScan 760, a 17-inch monitor with a Mitsubishi Diamondtron CRT. The $949 display has a 0.26mm dot pitch and supports resolutions up to 1,152 by 870 pixels at 75 Hz.

▸ **ViewSonic Corp.** added a 17-inch monitor to its Optiquest line. The $895 Optiquest V775 has a dot pitch of 0.26mm and a flat square CRT.

Sampo Technology Inc. of Norcross, Ga., is at (770) 449-6220; fax (770) 447-1109.

ViewSonic Corp. of Walnut, Calif., can be reached at (909) 869-7976 or (800) 888-8583; fax (909) 869-7958; http://www.viewsonic.com. □

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Quadra 630	4/250	$600
Quadra 650 CD	8/230	$1,200
Quadra 660AV CD	8/230	$950
Quadra 800 CD	8/230	$1,275
Quadra 840AV CD	8/230	$1,675
Quadra 950	8/230	$1,400
Power Mac 6100/60 CD	8/250	$1,000
Power Mac 6100/66 CD	8/350	$1,000
Power Mac 7100/66 CD	8/250	$1,150
Power Mac 7100/80 CD	8/700	$1,300
Power Mac 8100/80	8/250	$1,550
Power Mac 8100/100 CD	16/1GB	$2,250
Power Mac 8100/110 CD	16/2GB	$2,500
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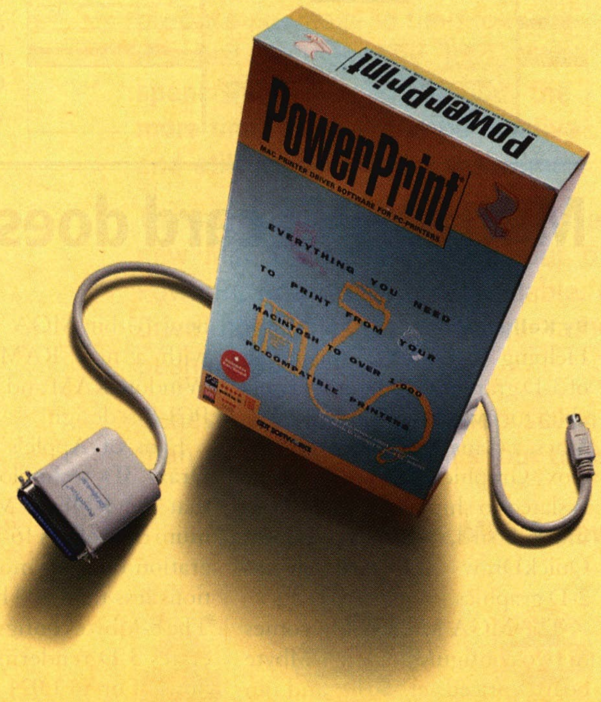
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Apple has cut its QuickTime VR authoring kit to $595 and axed royalties on applications created with it.

Macromedia revs xRes: Face lift tacks on tools

Image editor tied in with rest of line

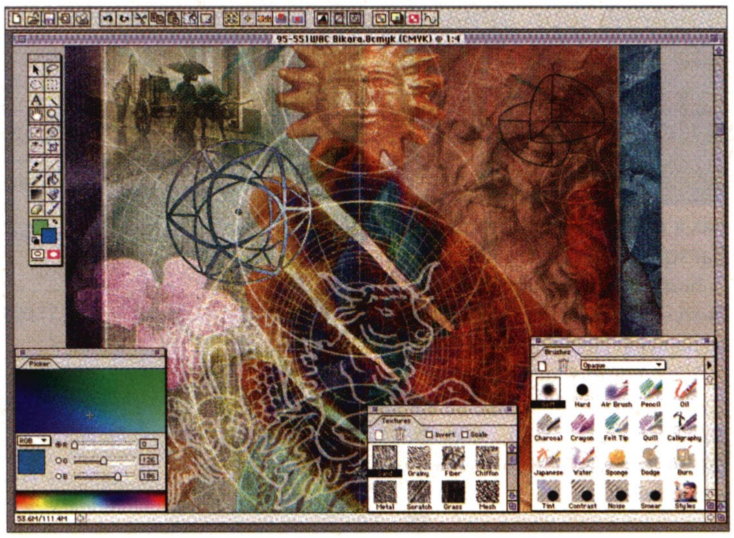
By Kristin Balleisen

Sticking its foot in the image-editing door, Macromedia Inc. this week will unveil xRes 2.0 at Macworld Expo.

xRes, which the company acquired last year when it purchased Fauve Software Inc. (see MacWEEK, Sept. 4, 1995, Page 4), will ship in early February for $699.

The new version will boast a revamped interface with a strip of quick buttons for basic operations such as cut, copy and paste, as well as more-specialized tasks such as applying filters and adjusting brightness and contrast.

According to Macromedia, the new version of xRes will also feature enhanced brushes that emulate natural media. The upgrade includes more than 40 preset brush styles — including chalk and quill pen — new retouching brushes, and a beefed-up collection of textures and texture brushes.



Macromedia Inc.'s rewrite of xRes packs new contrast, saturation and noise brushes, as well as new texture brushes and natural surfaces.

The company said Version 2.0 makes it easier for users to handle large files by letting them do high-resolution editing of image details on the fly, a feature that resembles Live Picture from Live Picture Inc. of Soquel, Calif. xRes 2.0 also supports multiple levels of Undo, Macromedia said.

Thanks to Macromedia's new Open Architecture (see MacWEEK, Dec. 11, 1995, Page 18), xRes 2.0 users can now draw on third-party Adobe Photoshop plug-ins and Macromedia Xtras, the company said. While earlier versions of the product supported filter plug-ins, Version 2.0 supports Acquire and Export mod-

See xRes, Page 22

Opcode Systems revamps MIDI apps

By Kelly Ryer

Macintosh-based musicians seeking closer harmony between audio and MIDI formats can turn to the latest version of Studio Vision Pro, Opcode Systems Inc.'s MIDI sequencer and audio-editing software .

Version 3.0 of the $995 application features audio-to-MIDI and MIDI-to-audio conversion. It also offers customizable mixer consoles that can handle up to 256 channels, a new digital signal processor (DSP) menu with several plug-ins for nondestructive editing and a feature for adjusting the tempo of audio tracks.

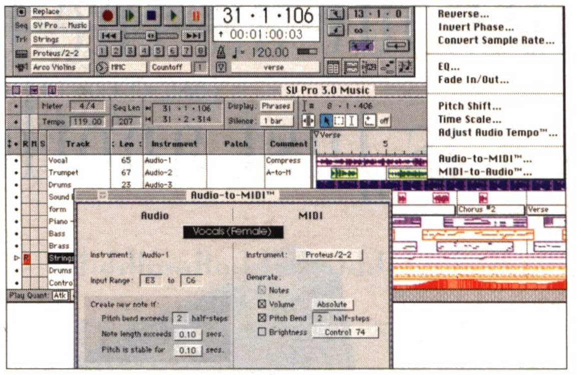
According to Opcode, an instrumentalist could use the Audio-to-MIDI feature to translate a recorded musical phrase to MIDI, adjust an individual off-key note, listen to the changes and translate the segment back to audio. The DSP plug-ins work on a copy of the original file and include common editing functions such as Normalize, Reverse, EQ and Sample Rate Conversion.

Version 3.0 is compatible with Digidesign Inc.'s Pro Tools III and TDM, as well as Yamaha Corp.'s CBX-D3 and D5 and Apple's Sound Manager for Power Macs. Upgrades from Version 2.0 are $129.95 each.

In related news, Opcode has also upgraded its $495 Vision MIDI sequencer to Version 3.0. Like Studio Vision Pro, Vision 3,0 includes new mixing consoles and support for Apple's Sound Manager.

Upgrades to Vision 3.0 are $99.95 each.

Opcode Systems Inc. of Palo Alto, Calif., is at (415) 856-3333 or (800) 557-2633; fax (415) 856-3332; http://www.opcode.com. □



Opcode's Studio Vision Pro 3.0 features two-way translation between audio and MIDI formats and drag-and-drop editing in the Track Overview window.

FOCUS ON PUBLISHING

Photo CD stakes claim among pro presenters

By Matthew Rothenberg

Developers of presentation graphics are using the Photo CD format from Eastman Kodak Co. of Rochester, N.Y., to help them focus on the bottom line when calculating time, cost and disc requirements of their productions.

Professional users of the digital-image technology said Photo CD lets them shoehorn images quickly and inexpensively into their disc-based productions while avoiding pricey scanning services.

According to Fred Bahr, presentation graphics manager with Graphics Unlimited Inc. of Minneapolis, his company's Photo CD system has taken the place of traditional scanning methods when generating electronic content on Macs and Intel-standard PCs.

"We use it in our production process for integrating images

See Focus On, Page 22

Betacam comes to Truevision PCI video card

By Carolyn Said

Truevision Inc.'s Targa 2000 PCI card is turning Pro.

The company has released a daughtercard upgrade that adds Betacam compatibility to its PCI video-digitizing card. The upgrade provides 720-by-486-pixel resolution as well as component, RGB and YUV support on the board. Other features include si-

See Truevision, Page 22

Matrox PCI card does 3-D

By Kelly Ryer

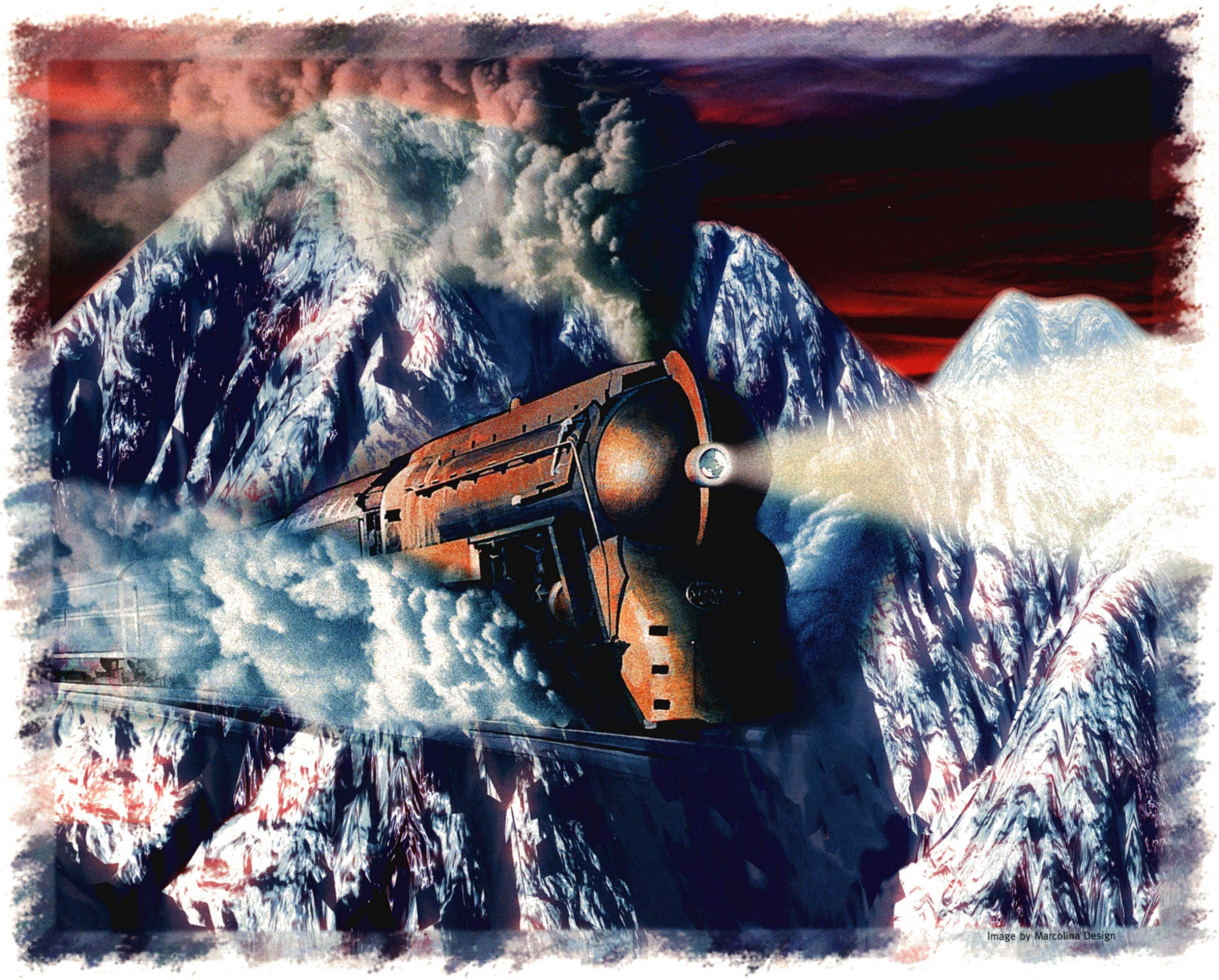
Helping to flesh out the range of 3-D graphics accelerators available to owners of PCI Power Macs, a Canadian company, Matrox Graphics Inc., this week is slated to ship its MGA Millennium board, which accelerates QuickDraw 3D as well as 2-D graphics.

The MGA Millennium comes in two configurations: a 4-Mbyte board priced at $649 and an 8-Mbyte board for $999.

Matrox said the MGA Millennium combines the company's new 64-bit MGA 2064W chip with a new RAM type called Window RAM and an optimized PCI-bus design.

Fans of Apple's new QuickDraw 3D technology will find that the 4-Mbyte MGA Millennium card offers 16-bit 3-D acceleration only on monitor resolutions less than 800 by 600 pixels. The 8-Mbyte configuration accelerates 3-D renderings at resolutions of up to 1,024 by 768 pixels in 24-bit color and handles a maximum resolution of 1,280 by 1,024

See Matrox, Page 22



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FOCUS ON

From Page 20

into our presentations as an alternative to a drum scanner or flatbed scanner," Bahr said. "It's a lot faster than our traditional methods; I don't know how we used to get work done when it would take 20 minutes a scan versus a couple of minutes [with Photo CD]."

Stuart Furgang refinery training manager for BP Oil Co. of Cleveland, said he adopted Photo CD as a low-cost route to instructional multimedia.

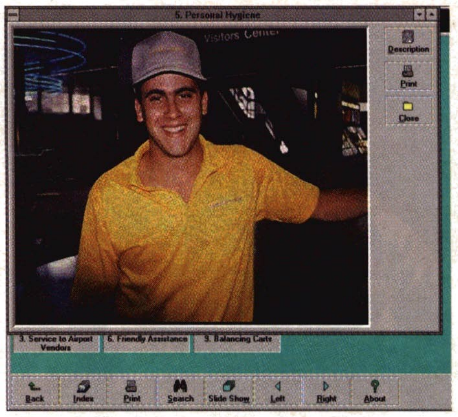
Furgang said he tried out the technology on safety presentations for visiting Occupational Safety and Health Administration representatives. "We shot 35mm images of various refining processes and talked to the hazards that were unique to each of these areas," he said.

Using Macs, Furgang built a script that played off a Photo CD system, including a front end that covered general hazards with a voice narration. Armed with a handheld controller, the presenter could then select specific areas of the refinery process.

According to Furgang, the BP test project "showed that Kodak Photo CD could be used easily and cost-effectively for training with high-quality images." The company continues to use Photo CD for generating safety presentations throughout its Ohio refineries, Furgang said.

The bottom line

Charles Corsello, vice president of marketing with Video Messenger Co. of Stamford, Conn., said his company was also eyeing the bottom line when it adopted Photo CD technology for the closed-circuit advertising systems it designs for hotels, restaurants and retail establishments.



Cleaning up with Photo CD: Graphics Unlimited saved time and money on scanning by swapping traditional methods for a Kodak system. Images for this presentation were done on the Mac.

Video Messenger uses Kodak's Build It and Arrange It authoring software on a Power Mac 9500 to move digital images of merchandise and services into Photo CD's base resolution of 512 by 768 pixels for display on television monitors. "Frankly, Photo CD's base level has more pixels than we've got" on a TV set, Corsello said. Until high-definition television becomes widespread, "trying to get more pixels [out of a television display] is like trying to milk a bull."

Customers who purchase Video Messenger's hardware and photo discs can then compose their own text to accompany the images. "By using Photo CD as the storage device for digital imaging, we can hold 700 to 800 images on disc," Corsello said.

"The biggest knock on multimedia is the expense to the average guy on the street," Corsello said. "He cannot afford $8,000 to $10,000 for a multimedia system." According to Corsello, Photo CD enables Video Messenger to provide its service for "long-term production costs that a 150-room hotel or small restaurant owner can live with." For example, customers can commission custom photo discs for about $10 per image plus the price of the disc, Corsello said.

Critical focus

Despite users' general satisfaction with Photo CD, professionals had a few criticisms of the technology. At the top of the list were the limitations of its built-in color correction. "We generally open scans in [Adobe] Photoshop," Graphics Unlimited's Bahr said. "We do have to work with the images themselves, but if you know what you're doing on the desktop, it's quite easy."

Video Messenger's Corsello said his company also uses Photoshop, not Photo CD, for color correction. "The Kodak software is very limited and not as easy as Photoshop," Corsello said. "Why step down from a Cadillac to a bicycle?"

However, according to Bob Seitz, chief technology officer with Visual In-Seitz Inc. of Rochester, Kodak has made great strides in color management. "When we started using Photo CD [in 1991], a number of things were problematic, such as conversion from YCC," Seitz said. "We were early proponents of easier color management and made our own systems. [However, now] these processes are becoming automatic."

Besides constraints on color controls, Corsello said, Photo CD offers limited control over sound, and — most significantly — does not support digital video. In fact, Corsello said, his company is looking to MediaMogul CD-I authoring software from OptImage Interactive Services Co. of West Des Moines, Iowa, because of its support for MPEG compression, which is unavailable via Photo CD.

"With MPEG, we can do *thousands* of images," Corsello said. "They're not as good resolution, but we don't want to do anything really fancy. We want to be able to select motion video — not to project on video walls but to put it up in a shoe department where customers can look up and see Michael Jordan [using the merchandise]." □

Truevision

From Page 20

multaneous NTSC or PAL video output separate from the desktop display, 16-bit audio, and hardware Motion-JPEG compression and decompression.

Both the Targa 2000 and the Targa 2000 Pro bypass the Mac for video processing. Instead, they use a shared on-board video buffer, an approach Truevision said ensures the integrity of the video signal.

The board, which runs on Power Macintosh 9500, 8500, 7500 and 7200 models , ships with 16 Mbytes of RAM and 4 Mbytes of video RAM.

Targa 2000 for PCI Macs is $5,795; the Pro daughtercard is $2,500 for current users. The PCI board with daughtercard is $7,995.

In related news, Truevision has released a package of new transition accelerations for the Targa 2000. The board currently accelerates two Adobe Premiere transitions; the free update will bring that number to seven, including acceleration of the Preview function.

Truevision Inc. of Santa Clara, Calif., can be reached at (408) 562-4200 or (800) 729-2656; fax (408) 562-4065; fax-back (800) 729-2656; info@truevision.com. □

Matrox

From Page 20

pixels in 16-bit color. Owners of the 4-Mbyte board will be able to purchase a 4-Mbyte daughtercard upgrade for $399.

For 2-D graphics, the 4-Mbyte MGA Millennium can display 24-bit color at resolutions of up to 1,152 by 870 pixels or 16-bit color at a maximum resolution of 1,600 by 1,200 pixels. The 8-Mbyte model accelerates 24-bit-color 2-D graphics at 1,280 by 1,024 pixels and 16-bit color at 1,600 by 1,200 pixels.

The new board also includes a control panel that lets users adjust color depth and resolution switching, hardware zoom, and refresh-rate selection, among other display features.

Matrox Graphics Inc. of Montreal can be reached at (514) 969-6300 or (800) 361-1408; fax (514) 969-6363; http://www.matrox.com. □

xRes

From Page 20

ules, and users can now scan images directly into xRes.

In addition, users can now import FreeHand paths to create shapes and outlines.

xRes 2.0 courts Web designers with support for Portable Network Graphics, progressive JPEG and GIF89a formats. Macromedia said the new version includes composite with a transparent key color in indexed-color mode.

"I like the addition of Photoshop [image-editing capabilities] with natural-media brushes," said fine artist and xRes beta tester Dorothy Simpson Krause of Boston-based Unique Editions. "The interface is also very [intuitive], so the learning curve is low."

Current users of xRes can upgrade to Version 2.0 for $99. Macromedia is also offering competitive upgrades to Photoshop, Live Picture and Fractal Design Corp.'s Painter users for $199.

Macromedia Inc. of San Francisco can be reached at (415) 252-2000 or (800) 326-2128; fax (415) 626-0554; http://www.macromedia.com. □

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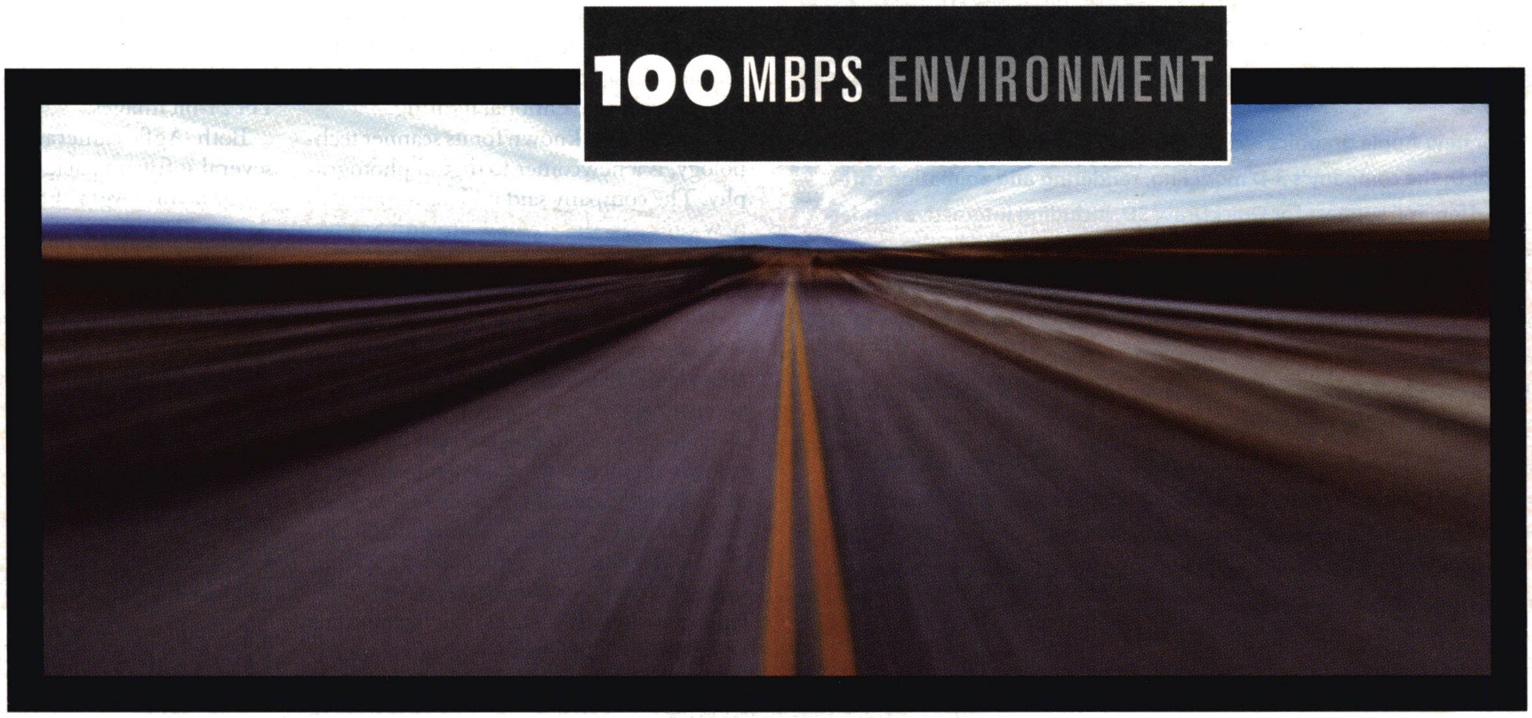

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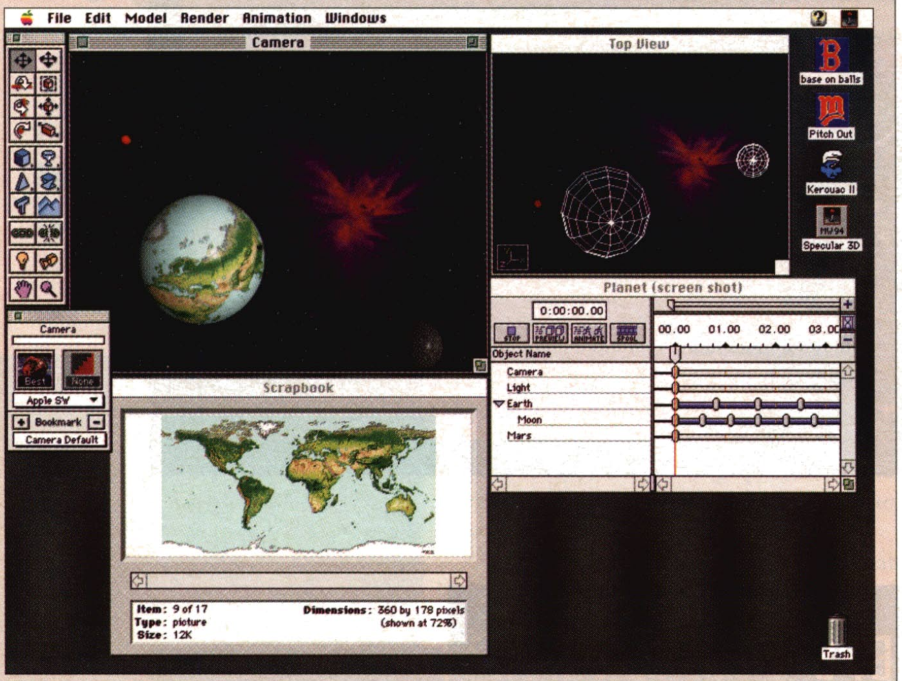
INFINI-D 3.1 HANDLES QUICKDRAW 3D, QUICKTIME VR



Item: 9 of 17
Type: picture
Size: 12K
Dimensions: 360 by 178 pixels (shown at 72%)

Adding support for new Apple graphics technology, Specular in December shipped Version 3.1 of Infini-D, the company's 3-D modeling, rendering and animation software. Infini-D 3.1 offers full support for QuickDraw 3D, including interactive rendering, the ability to use hardware boards for rendering, and 3DMF (3-D metafile format) import and export (see MacWEEK, Oct. 23, 1995, Page 12). The update also lets users drag and drop textures onto objects (pictured) and make QuickTime VR movies of 3-D objects and panoramas.

Other new features include QuickTime mapping and faster ray tracing. Upgrades are free from Version 3.0 or $179 from earlier versions.

Specular also recently shipped Version 2.0 of LogoMotion, its 3-D logo-animation package. LogoMotion 2.0 adds dragging and dropping of elements into a scene, Phong rendering, and texture maps and shadows. LogoMotion is $199.

Specular of Amherst, Mass., can be reached at (413) 253-3100 or (800) 433-7732; fax (413) 253-0540; http://www.specular.com.

Cameras take a shot at the digital market

By Kelly Ryer

In digital photography's latest double exposure, two companies will ship digital cameras this month: Phase One United States Inc. and Agfa, a division of Bayer Corp., are hoping their latest offerings will click with the growing digital camera market.

▸ **Phase One's** PhotoPhase Plus is a $25,000 one-pass digital camera back that fits on any 4-by-5-inch view camera. It has two microprocessors and an optical area of 7 by 10 centimeters, and it captures 36-bit-color, 5,000-by-7,200-pixel images at rates of up to 30 Mbytes per minute. With sensitivity equivalent to an ASA of 800 and exposure times as long as one-fifteenth of a second, the PhotoPhase Plus is designed for use with conventional lighting.

▸ **Agfa,** well-known for its scanner technology, is a newcomer to digital photography. The company said it plans to ship two new cameras, the ActionCam and StudioCam, at this week's Macworld Expo in San Francisco. Each camera lists for $9,499.

The StudioCam is a scanning camera with a sensitivity of 100 to 400 ASA and a zoom lens. It has a 36-by-29mm optical area, and the StudioCam's optic path can swivel 90 degrees for both portrait and landscape modes. Tethered to a Macintosh via a SCSI-2 interface, the camera can capture resolutions of 4,500 by 3,648 pixels at 36 bits.

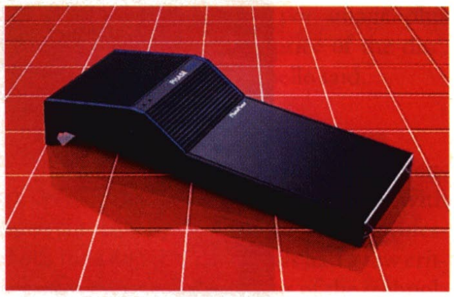


Photo Phase Plus flash memory lets users upgrade the camera back via their Macs.

The ActionCam's prism beam splitter captures images onto three separate CCDs (charge-coupled devices) at resolutions of 1,548 by 1,146 pixels. Shutter speeds range from one-half to one-two thousandth of a second, and its equivalent ASA is 800. The ActionCam uses Type III PC Card hard disk cards, which can hold up to 114 24-bit images.

Both Agfa cameras are bundled with several software packages, including Agfa FotoFlavor, Agfa FotoTune Cam and Adobe Photoshop LE.

Phase One United States Inc. of Northport, N.Y., can be reached at (516) 757-0400 or (800) 972-9909; fax (516) 757-2217; http://www.phaseone.com.

Agfa, a division of Bayer Corp., of Ridgefield, N.J., can be reached at (201) 440-2500 or (800) 685-4271; fax (201) 440-8187; http://www.agfahome.com. □

Linotype polishes flatbed lineup

By Kristin Balleisen

Linotype-Hell Co. this week will take the wraps off a new flatbed scanner for graphics professionals at Macworld Expo in San Francisco.

The Opal, due in February for $9,990, will feature a double-lens system: One lens will be able to capture 12-by-17-inch images at 400 by 800 dpi, while the other will scan 6-by-17-inch images at 800 by 1,600 dpi.

The SCSI-2 device will also feature a built-in 8-by-10-inch transparency unit and will capture 30 bits of RGB information in a single pass. Linotype said the Opal will scan an A4-size, 300-dpi image in 2 minutes, 8 seconds. The scanner will ship with Linotype's LinoColor image-capture and image-processing software, the complete version of Adobe Photoshop, and Canto Software Inc.'s Cumulus 2.5 multimedia cataloging program.

The Opal will join the company's $4,000 Saphir color flatbed as the first two devices marketed and distributed by the company's new Desktop Solutions Division, announced this week.

Linotype-Hell Co.'s Desktop Solutions Division of Hauppauge, N.Y., is at (516) 434-2000 or (800) 842-9721; fax (516) 434-2706; http://www.linotype-hell.com. □

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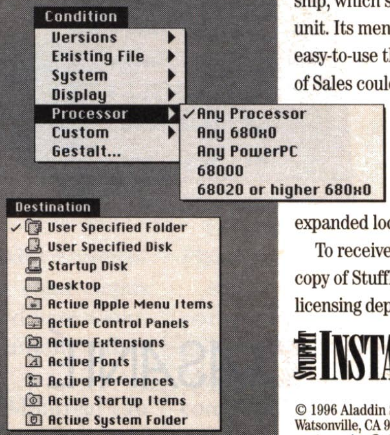

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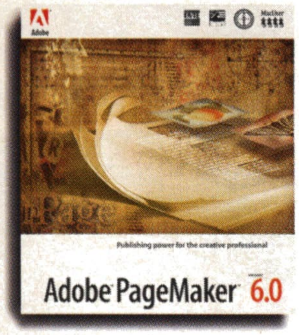
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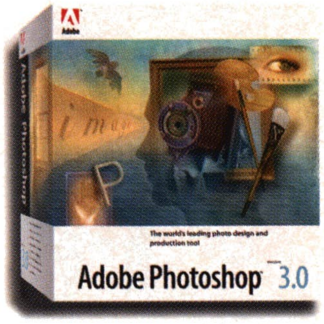
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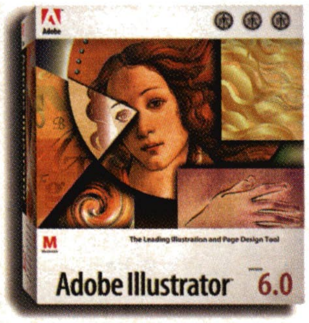
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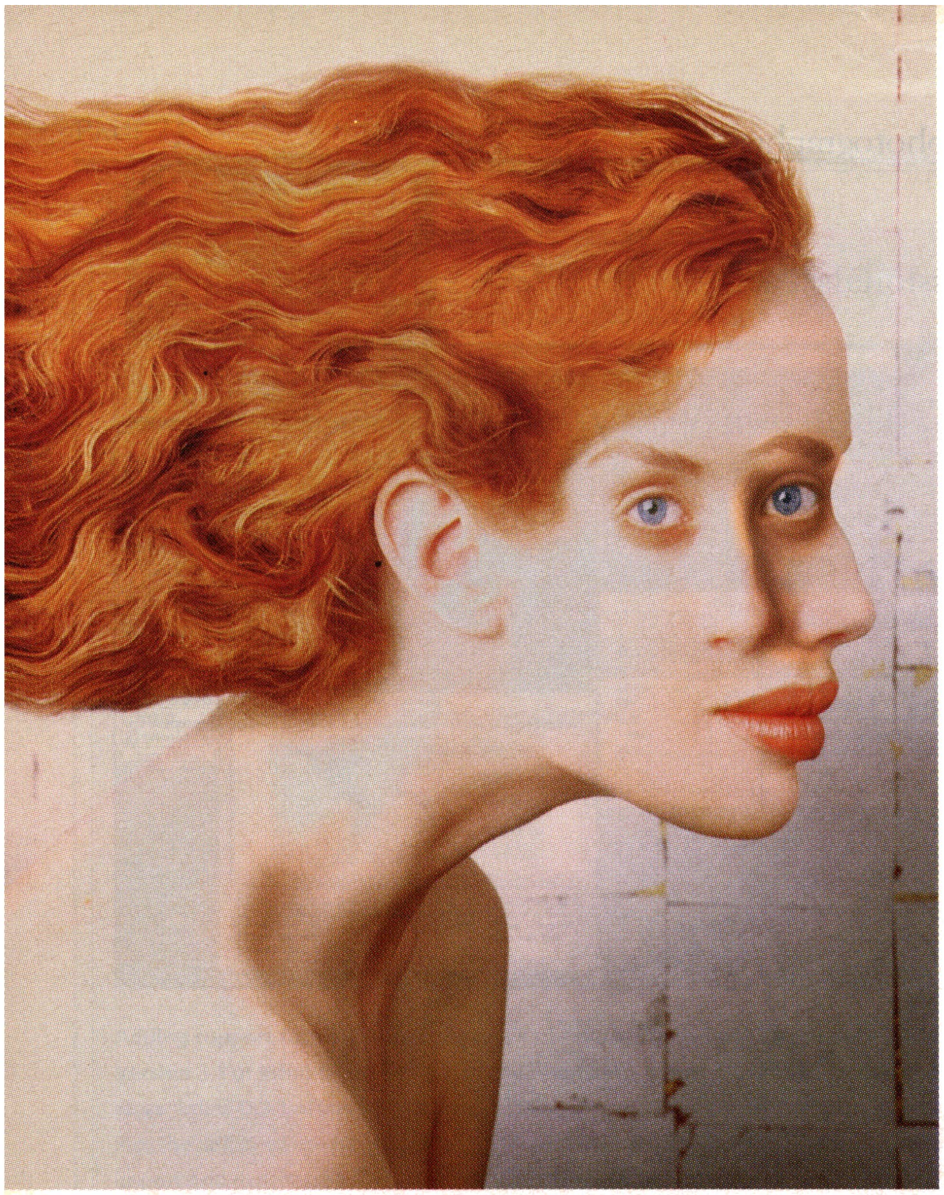

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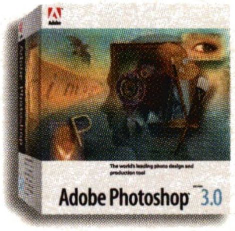

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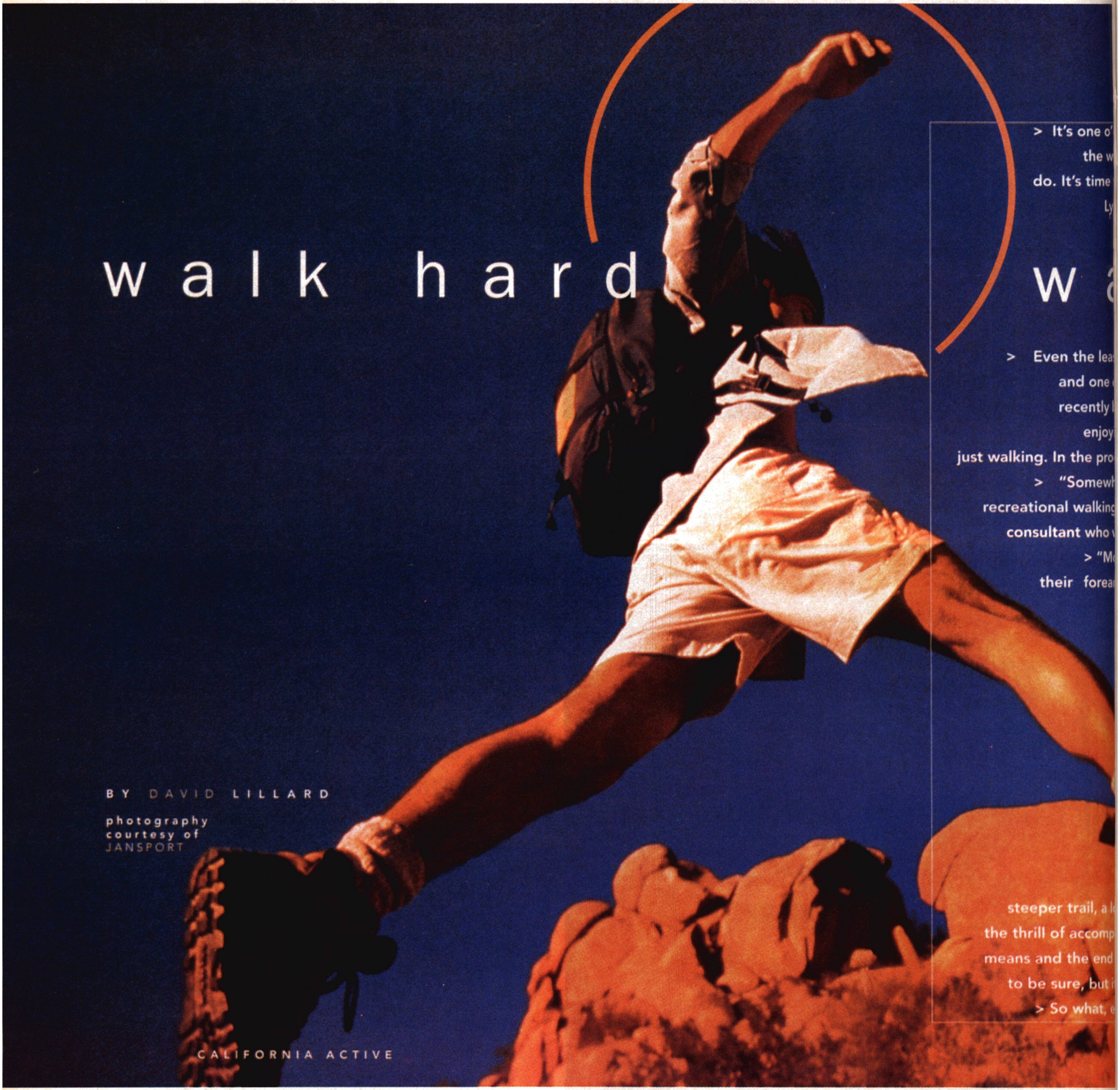

walk hard

BY DAVID LILLARD

photography
courtesy of
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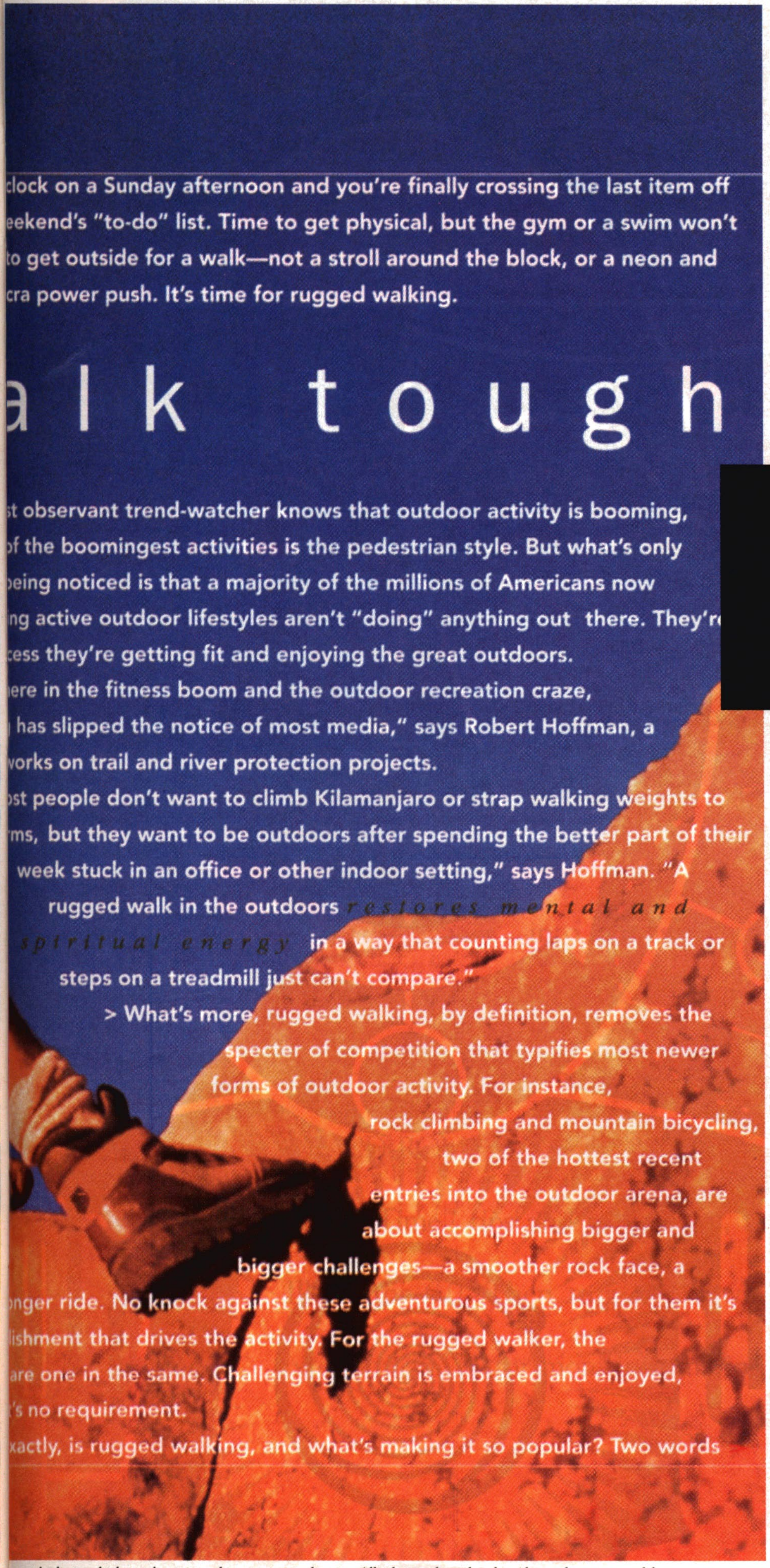
on PageMaker 6.0.



clock on a Sunday afternoon and you're finally crossing the last item off
eekend's "to-do" list. Time to get physical, but the gym or a swim won't
to get outside for a walk—not a stroll around the block, or a neon and
cra power push. It's time for rugged walking.

alk tough

st observant trend-watcher knows that outdoor activity is booming,
of the boomingest activities is the pedestrian style. But what's only
being noticed is that a majority of the millions of Americans now
ng active outdoor lifestyles aren't "doing" anything out there. They'r
cess they're getting fit and enjoying the great outdoors.
ere in the fitness boom and the outdoor recreation craze,
has slipped the notice of most media," says Robert Hoffman, a
vorks on trail and river protection projects.
ost people don't want to climb Kilamanjaro or strap walking weights to
ms, but they want to be outdoors after spending the better part of their
week stuck in an office or other indoor setting," says Hoffman. "A
rugged walk in the outdoors restores mental and
spiritual energy in a way that counting laps on a track or
steps on a treadmill just can't compare."
> What's more, rugged walking, by definition, removes the
specter of competition that typifies most newer
forms of outdoor activity. For instance,
rock climbing and mountain bicycling,
two of the hottest recent
entries into the outdoor arena, are
about accomplishing bigger and
bigger challenges—a smoother rock face, a
nger ride. No knock against these adventurous sports, but for them it's
lishment that drives the activity. For the rugged walker, the
are one in the same. Challenging terrain is embraced and enjoyed,
's no requirement.
xactly, is rugged walking, and what's making it so popular? Two words

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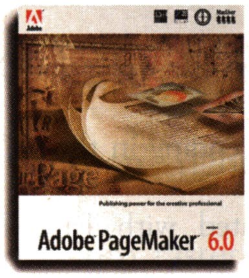

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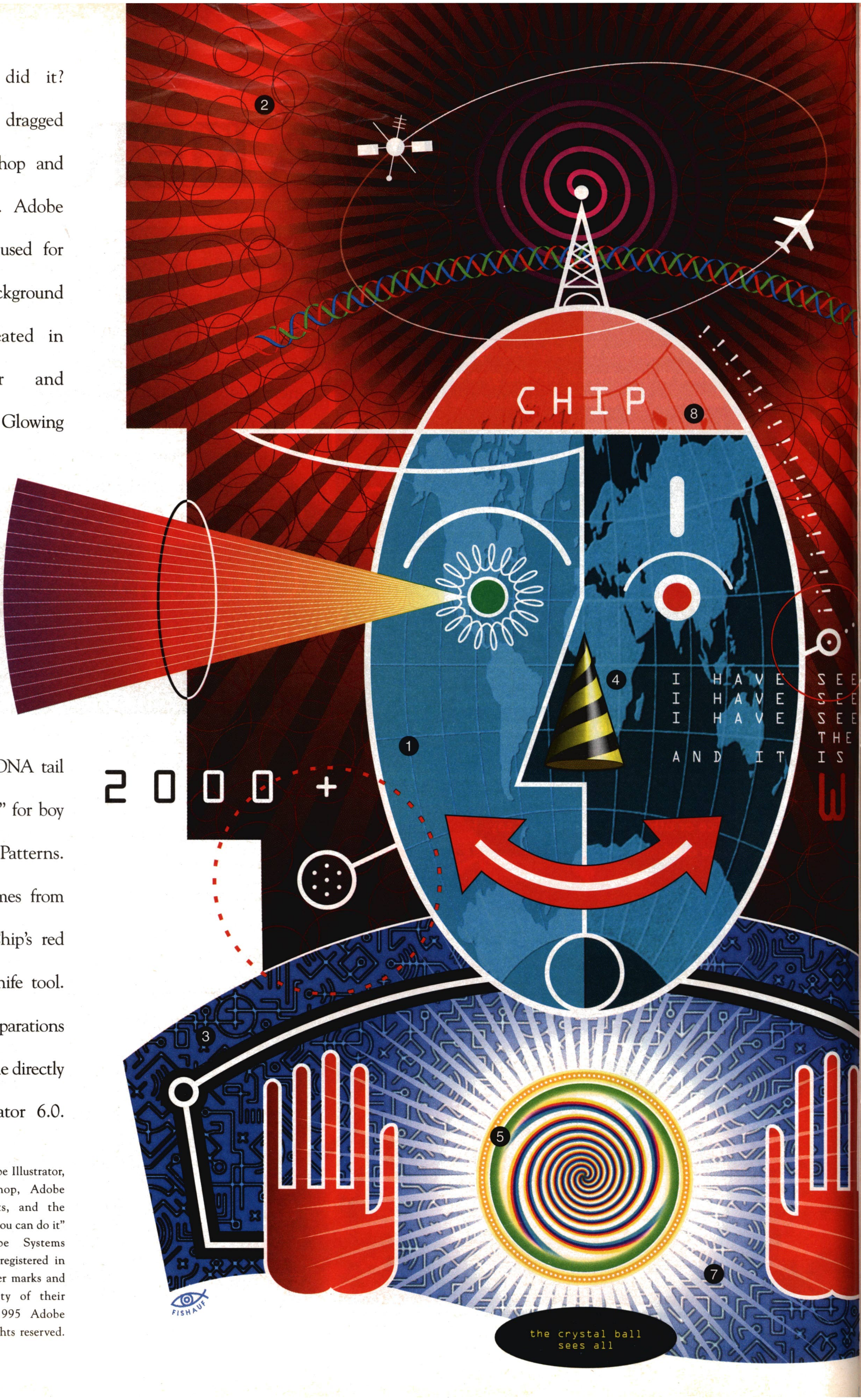
Wonder how we did it? Globe map ❶ is dragged from Adobe Photoshop and dropped into place. Adobe Gallery Effects™ is used for embossed look. Background pattern ❷ is created in Adobe Illustrator and rasterized in place. Glowing Edges filter ❸ is applied and masked into shape. Cone ❹ is created using Adobe Dimensions. The twirl ❺ effect comes from a Photoshop plug-in. DNA tail ❻ ending in the "o" for boy created with Path Patterns. "Ray" effect ❼ comes from Create Star filter. Chip's red cap ❽ cut using knife tool. And by the way, separations and printing were done directly from Adobe Illustrator 6.0.



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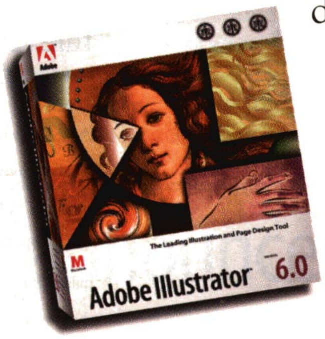

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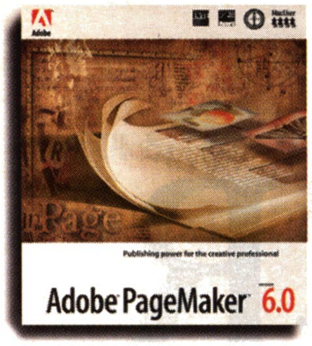

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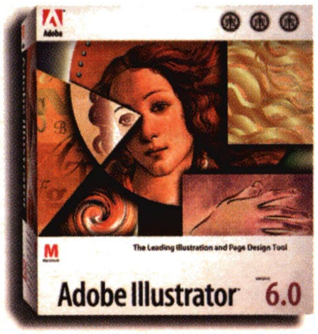

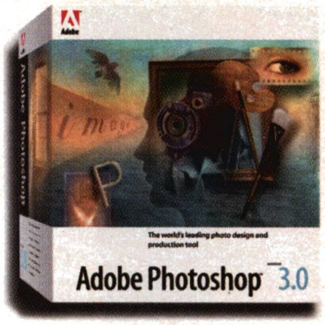

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NO JAVA SERVICE

Netscape Corp. reports that support for Sun Microsystems Inc.'s Java will not be included in Navigator 2.0's browser.

STFMail makes debut

STF shows e-mail and fax software

By Joanna Pearlstein

At Macworld Expo this week STF Technologies Inc. will expand its connectivity offerings with a new e-mail product, a network fax system and an upgrade to its personal fax software.

STF this month will ship STFMail, an alternative front end for PowerTalk (see MacWEEK, July 24, 1995, Page 1). STFMail will support rules-based mail handling. It will integrate with STF's other new product, FaxSTF Network Edition, a network fax system that will route incoming faxes to users' desktops via STFMail.

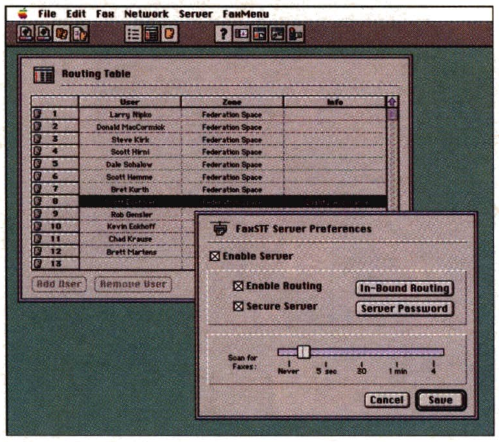
Expected for release this month, FaxSTF Network Edition comprises the new FaxSTF Server and STF's personal fax software, FaxSTF. The server runs atop ADSP (AppleTalk Data Stream Protocol) and does not require a dedicated server. A five-user pack will cost about $300, the company said.

The company shipped version 3.2 of FaxSTF in December. The new version includes a new interface, fax-forwarding capabilities, location settings, a fax queue, a quick-fax feature and a new Fax menu. The new version also includes a call-blocking feature that prevents faxes from being sent to particular destinations and a password-protection feature to prevent unauthorized users from viewing and sending faxes.

FaxSTF 3.2 costs $99; upgrades are between $19.50 and $39.50, depending upon the version being upgraded.

At Macworld Expo this week STF will also show a still-unnamed product described as integrated communications software. It will include fax, voice messaging and data communications capabilities.

STF Technologies Inc. of Concordia, Mo., is at (816) 463-7972; fax (816) 463-2179; stftech@aol.com. □



Routing Table

	User	Zone	Info
1	Larry Nipko	Federation Space	
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3	Steve Kirk	Federation Space	
4	Scott Hirni	Federation Space	
5	Dale Sohalow	Federation Space	
6	Scott Hemme	Federation Space	
7	Bret Kurth	Federation Space	
8	[illegible]	[illegible]	[illegible]
9	Rob Gensler		
10	Kevin Eckhoff		
11	Chad Krause		
12	Brett Martens		
13			

FaxSTF Server Preferences

☒ Enable Server

☒ Enable Routing

☒ Secure Server

Scan for Faxes: Never 5 sec 30 1 min 4

STF's network fax system can route received faxes to their designated recipients.

SoftArc announces FirstClass updates

By Clifford Colby

Making the most of its first appearance at a Macworld Expo in San Francisco, SoftArc Inc. plans this week to unseal its upcoming e-mail-system plans.

SoftArc intends to announce that Version 3.0 of its FirstClass Client for Macintosh will ship in spring. The update will include support for quoted text, multiple levels of Undo in the text editor and the capability to send blind carbon copies.

SoftArc also plans to offer Version 3.5 of FirstClass Server for Macintosh in the second quarter. The update will run native on Power Macs for the first time but will also be available in a 680x0 version. FirstClass Server 3.5 will also be compatible with Open Transport, as will the upcoming client.

SoftArc also plans to reveal this week its FirstClass Designer 3.0 for Macintosh, a new utility that will let users create message forms. The utility, also due this spring, will be free for registered users of FirstClass servers.

Pricing for FirstClass 3.0 will range from about $495 for a five-user license plus the server to $4,295 for 100 users. Registered users can upgrade free.

In related news, SoftArc recently shipped $495 gateways for CE Software Inc.'s QuickMail and Microsoft Mail and said it will soon ship Messaging APIs for Windows NT and its own upcoming Mac server.

SoftArc Inc. of Markham, Ontario, is at (905) 415-7000; fax (905) 415-7151; sales@softarc.com; http://www.softarc.com. □

AppleShare 4.2 faster

By Robert Hess

Apple in December shipped the first Power Mac-native version of its AppleShare server software and made several performance-enhancing changes.

Version 4.2 offers file transfer speed improvements up to 136 percent; multi-user database transactions happen up to 328 percent faster. Ten times as many files can be open at once, and 250 users may be on-line at a time, up from 150 in AppleShare 4.1.

Although Version 4.2 is not compatible with Open Transport, an update will be available soon after Open Transport 1.1 ships this month.

Customers who purchased AppleShare 4.0 or above before Sept. 1, 1995, can upgrade to 4.2 for $199. Those who purchased the software after that date may obtain it for the cost of shipping and handling. Users may call (800) 950-5382, Ext. 759 for ordering. □

PowerBuilder for Mac ships after long delay

Dev tool bundled with PowerScript

By Clifford Colby

Mac developers can stop holding their breath: Powersoft Corp. recently shipped the long-awaited PowerBuilder for Macintosh.

The popular object-oriented, client-server development tool, originally due by the end of 1993, costs $3,295 per developer with no runtime charges and is available only in a 680x0 version. Powersoft said it plans to have a Power Mac-native application ready after the next Windows version ships in the first half of this year.

PowerBuilder for the Mac comes with PowerScript, the tool's development language. It lets users compose Apple-events scripts and issue them, but PowerBuilder is not currently scriptable. It also includes DataWindows, which allows users to manipulate data without having to do SQL coding.

PowerBuilder for the Mac comes with a single-user version of Powersoft's Watcom SQL 4.0 database. The tool also includes Open Database Connectivity hooks and native drivers for Oracle6 and Oracle7 and Sybase SQL Server 4 and 10 databases.

See PowerBuilder, next page

FOCUS ON

COMMUNICATIONS

Open Transport gets ready for prime time

By Clifford Colby

Apple's budding networking architecture, Open Transport, is scheduled to bloom this month, and the company hopes the release will address the reliability and speed problems that have dogged it since its debut last summer.

"We are trying not to defer anything from this release," said Garry Hornbuckle, Apple product line manager of Mac OS communications. "In meeting people's day-to-day needs, I think we are on the nose."

The upcoming version of Open Transport will branch out to support NuBus-based Power Macs and 68030 and 68040 Macs. The update will also add support for NuBus cards and SCSI-based adapters, PCI token-ring adapters, and infrared and PC Card connec-

See Focus On, next page

Open Transport 1.1 additions

- **Improved performance of high-speed data links**
- **Optimized for server applications**
- **Bug fixes**
- **Support for 68030 and 68040 Macs and NuBus Power Macs**
- **Improved compatibility with e-mail applications**
- **Support for TCP load/unload without restarting**
- **Improved compatibility with Dynamic Host Configuration Protocol**
- **Improved backward compatibility with SLIP and PPP**
- **Expanded support for network analyzers**

FOCUS ON

From previous page

tions. And the new version will include a passel of bug fixes.

Hornbuckle said Version 1.1 of Open Transport will be tuned for faster networking links, including Fast Ethernet, Fiber Distributed Data Interface and Asynchronous Transfer Mode.

"Initially, the performance of Open Transport was slow, but Apple has addressed that," said Deborah Anderson, senior software engineer for Rockwell Networking Systems of Santa Barbara, Calif.

"I have been seeing phenomenal improvement with the new version of Open Transport," she said. "We believe the entire protocol suite is not fully optimized, but we are seeing quite a big leap."

Anderson said she is getting 45-Mbps transfer rates running benchmark tests on her company's Fast Ethernet PCI cards and a beta version of Open Transport 1.1. She said Rockwell's FDDI PCI card is running at 70 Mbps on the same tests. Interphase Corp. of Dallas announced its 155-Mbps ATM PCI card also received a speed boost from the upcoming version of Open Transport, clocking 92 Mbps over TCP/IP.

The upcoming release will address various aspects of Open Transport performance. "The first releases [of Open Transport] were tuned for the client," Hornbuckle said. "This one is focused on being a good platform for server development."

Hornbuckle said the upcoming release will substantially improve how Open Transport handles simultaneous multiple communications sessions. The update will support multihoming, which allows users to run more than one network connection at the same time using the same networking protocol. Version 1.1 will also include multinode support, which allows for more than one address per card.

The upcoming version will also have expanded compatibility for Serial Line Internet Protocol, Point-to-Point Protocol and Dynamic Host Configuration Protocol.

Users, however, won't be able to get Open Transport 1.1 until shortly after this week's Macworld Expo. Version 1.1 was originally scheduled to ship by the end of 1995, but Hornbuckle said the date was pushed back when engineers were diverted to the unplanned-for Version 1.0.8 of Open Transport. He said the Open Transport team also wanted to synchronize the release with Apple's overall operating system plans.

Hornbuckle said Open Transport will be integrated with the Mac OS at the first opportunity, but users don't have to wait until then; Version 1.1 will be available later this month through Claris Corp.'s distribution channels. Those with MacTCP and Mac OS maintenance contracts will receive the update free, and developers who have applications using Open Transport can bundle it free with their software.

Looking ahead, Hornbuckle said Version 2.0 is tied to the release of Copland and will take advantage of the microkernel services of the upcoming OS. Version 2.0 may also include AppleScript support and integration with IPX, X.25 and ISDN (Integrated Services Digital Network) protocols.

"It has been rough [since Open Transport shipped], and our customers have been very frustrated," said Alan Lefkof, president and CEO of Farallon Computing Inc. of Alameda, Calif. "The good news is that Apple took this very seriously, and it appears they have come through." □

PowerBuilder

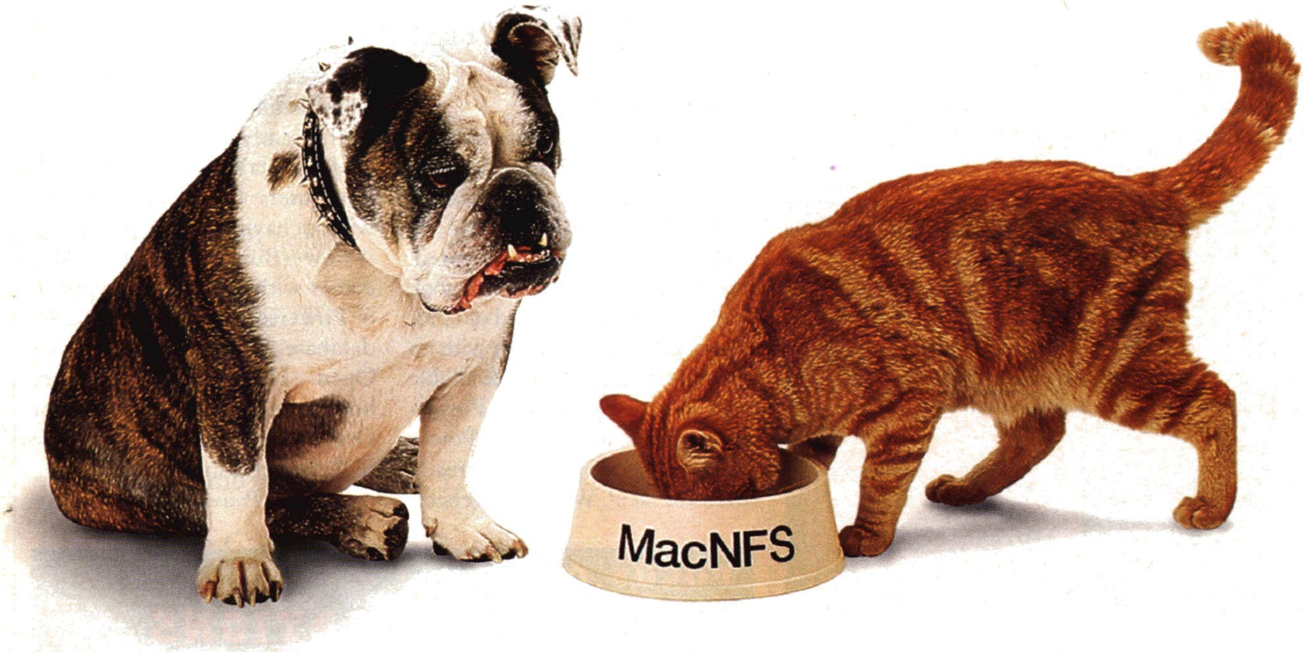
From previous page

Connectix Corp.'s RAM Doubler comes bundled with the Mac version of PowerBuilder; Powersoft suggests developers have 24 Mbytes of RAM, with 16 Mbytes of RAM recommended for deployment.

"So far, I have found it to be a very productive environment," said Jim Boettcher, a programmer/analyst for MathWorks Inc., a mathematics software company in Natick, Mass. "There is a learning curve to go through, but once you shift to its object-oriented approach, PowerBuilder becomes pretty intuitive."

Powersoft also shipped in December the Mac version of InfoMaker, its $249 tool for creating reports, queries and business graphics without programming.

Powersoft Corp. of Concord, Mass., is at (508) 287-1500 or (800) 395-3525; fax (508) 369-3997; http://www.powersoft.com. □



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More modems join market

By Joanna Pearlstein

Two more companies have entered the PC Card modem fray.

Motorola PCMCIA Products Division has broadened portable users' connectivity options with the announcement of two new multifunction PC Cards. Due at the end of this month, the company's $329 Montana card combines a 28.8-Kbps fax modem with cellular and paging features. Motorola's new Mariner PC Card combines a 28.8-Kbps fax modem with LAN functionality. The $599 Mariner card is due in March.

Both products include Motorola's Messaging Partner software for paging system interfaces. When the cards are used with Motorola's two-way pager, Tango, users can send alphanumeric pages and cut, paste, archive and print pager messages. The V.34 modem uses the ETC (Enhanced Throughput Cellular) error-correction protocol for cellular transmissions. Mariner can be used on 10BASE T and 10BASE 2 Ethernet networks.

Viking Components Inc. has also jumped into the Mac modem market with its first PC Card. Available now, the $329 NetLink 28.8 Data/Fax PC Card Modem is a 28.8-Kbps modem on a Type II PC Card. The V.34-compliant product supports 14.4-Kbps faxing and V.42 data compression.

The NetLink comes with software for communications, on-line services and Internet connectivity.

Motorola PCMCIA Products Division of Schaumburg, Ill., can be reached at (708) 538-5200 or (800) 427-2624; http://www.mot.com/MIMS/ISG/.

Viking Components Inc. of Laguna Hills, Calif., can be reached at (714) 643-7255 or (800) 338-2361; fax (714) 643-7250; http://www.vikingmem.com. □

InterCon DNS set for release

By Joanna Pearlstein

InterCon Systems Corp. this month will release a domain name server and Open Transport-native versions of NFS/Share and InterServer Publisher.

Called InterServer DNS, the $295 domain name server, or DNS, will be released at the end of this month. The product will support caching, log viewing and primary zone transfer. A February update to the product will include support for secondary zone transfer, InterCon said.

The company also recently updated NFS/Share, its network file-sharing software. Reading and writing large files in Version 1.4 is three times faster than in the previous version, according to the company. Priced at $249 per node, NFS/Share is based on the Network File System protocol, which is used on Mac, Intel-standard PC and Unix-based systems.

Version 1.02 of InterServer Publisher, the company's Web, FTP and Gopher server, hit the streets in December. The update fixes problems the previous version had with PCI Macs. The $495 InterServer Publisher ships with CGI (Common Gateway Interface) scripts, templates and clip art.

InterCon said it will release native Open Transport versions of NFS/Share and InterServer Publisher when Apple releases Open Transport 1.1, expected this month.

In other news, the company released Version 2.3 of TCP/Connect II, its all-in-one Internet client. The product now includes a built-in Point-to-Point Protocol (PPP) stack, which allows Internet surfers to use any other Internet client. The revised Web browser supports HTML 3.0 tags, JPEG and incremental sound, drag-and-drop URLs (uniform resource locators), and the Chinese character set. The $495 TCP/Connect II Extended is used to connect to the Internet via LAN, PPP or Serial Line Internet Protocol (SLIP) connections; TCP/Connect II Remote (used only over PPP and SLIP connections) costs $195.

InterCon Systems Corp. of Herndon, Va., can be reached at (703) 709-5500; fax (703) 709-5555; info@intercon.com; http://www.intercon.com. □

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Apple ships conferencing kit

By Carolyn Said

Almost a year after introducing it, Apple in December shipped the QuickTime Conferencing Kit, a hardware-software solution for videoconferencing and collaboration over AppleTalk and TCP/IP networks.

Priced at $289, the kit includes the Apple Media Conference software, the QuickTime Conferencing System Extension, a third-party color video camera and cabling. Apple Media Conference software provides shared whiteboard capabilities, point-to-point and multipoint videoconferencing sessions, and recording of sessions as QuickTime movies. The video camera offers 320-line resolution and manual or automatic focusing.

The kit requires a Mac with an AV card, 16 Mbytes of RAM and a microphone. Users must be connected to an Ethernet network via TCP/IP or AppleTalk, or to the Internet via a TCP/IP connection with throughput of at least 128 Kbits per second.

Apple said it plans to release this month an upgrade that will add ISDN (Integrated Services Digital Network) support. Priced at $1,750, the QuickTime Conferencing ISDN Kit will include an ISDN NuBus card, an H.320-compliant hardware compressor-decompressor, H.320 software, a telephone handset and cabling. A PCI version of the kit is slated for delivery in the second quarter.

Claris Corp. will offer volume licensing of the QuickTime Conferencing software without the camera. Apple said the software's whiteboard features would make it a useful tool for collaboration without videoconferencing, as in schools, for example.

The QTC software has been bundled with the Power Mac 8500 and 7500 since August; Connectix Corp. sells the software as part of its $249 VideoPhone package, which uses the company's digital QuickCam video camera (see MacWEEK, Oct. 23, Page 4).

This month Apple will launch a Web site with information on videoconferencing at http://qtc.quicktime.apple.com. □

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WHAT DID YOU HAVE IN MIND?™

Metrowerks hits expo swinging

By Robert Hess

After a record quarter, Metrowerks Inc. is eager to show off its accomplishments at this week's Macworld Expo in San Francisco, where it will ship the SourceSafe-compatible CodeManager DR1 and CodeWarrior 8.

CodeManager is Metrowerks' source-code management software for large programming groups. Compatible with Microsoft Corp.'s SourceSafe, it costs $399 and includes three updates. The third update, set to ship at the Apple Worldwide Developers Conference in May, will include graphical user interface support direct from CodeWarrior and will ship as a shared library.

CodeWarrior 8 includes a new class browser; split panes in the editor; further compiler optimizations; zero-overhead runtime exception handling; Microsoft Foundation Classes 4.0; and new constructor features, including a menu editor. The debugger now has watch points.

The company will also be selling Hayden Books' "Discover Programming with CodeWarrior" by Dave Marks, which is priced at $79 with an included CD-ROM.

Metrowerks Inc. of Austin, Texas, is at (512) 305-0400 or (800) 377-5416; fax (512) 305-0439; info@metrowerks.com; http://www.metrowerks.com □

PageMill, BBEdit deal

Bare Bones Software Inc. announced late in December a discount opportunity for BBEdit 3.5, the company's text-processor.

Owners of Adobe Systems Inc.'s PageMill graphical Web page editor can buy BBEdit for $79. BBEdit, which was first released commercially in 1993, has also been included with Apple's Internet Server Solution.

Bare Bones Software Inc. of Bedford, Mass., can be reached at (508) 651-3561; fax (508) 651-7584; bbsw@netcom.com; http://www.tiac.net/biz/bbsw/. □

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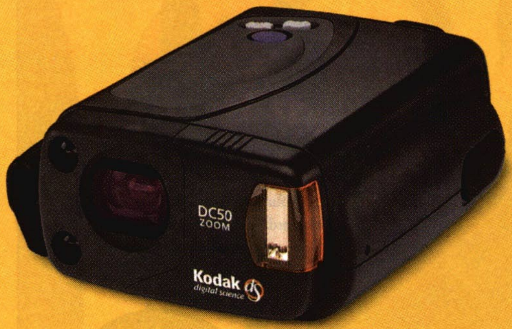

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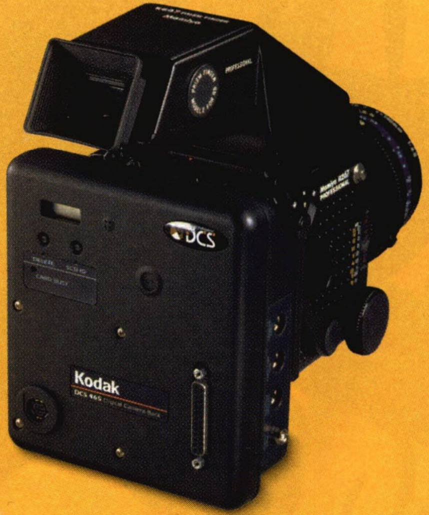

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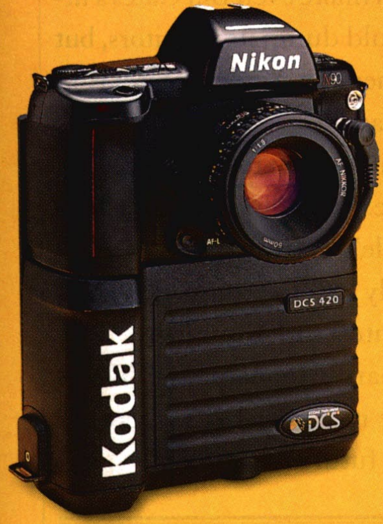

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Hardware counts

There's a faction in the Macintosh community that believes Apple should get out of the hardware business. The reasoning behind this idea stems from profit envy. People get wistful when looking at Microsoft Corp.'s and other companies' robust bottom lines and compare them with Apple's anemic earnings. Some people think that if the company dropped its burden of CPUs and peripherals, the money would just roll in.

This line of reasoning conveniently overlooks the intricate relationship between the Mac OS and the hardware underneath it. Making the Mac OS hardware-independent would mean diminishing the capabilities of the Macintosh system, everything from plug and play to integrated audiovisual technology.

By getting out of the CPU business Apple would also lose opportunities to influence emerging markets by seeding them with systems and grabbing market share. It did this early in the education market and, most recently, in the Internet server market, where Apple has jumped to take the No. 2 spot. In part, this success has been because the company has offered seed units to influential sites on the Web. Webmasters at those sites have been spreading the word about the ease of use and power inherent in Mac Internet servers.

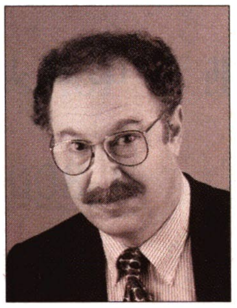
On the peripherals side, Apple's printer business delivers in the neighborhood of a billion dollars in revenue annually, and the high-margin consumables that get sold with printers would make even Bill Gates a little envious. Sure, Apple could dump its monitors, but for brand-conscious consumers, an Apple monitor is an essential part of their purchase.

Another point worth noting is that to date Apple has not made money in software. Excluding some of Claris Corp.'s product line, Apple's software is a money-losing endeavor. It's unlikely that the company would suddenly be able to turn it into a cash machine.

Let's face it: Apple is a hardware company. That's where its roots are and, like it or not, that's where the money is for the foreseeable future. □

THE SECOND DECADE HENRY NORR

Low-cost Net stations? Don't forget the telephone



For a device that doesn't even exist, the $500 network computer has inspired an astonishing flood of words. In recent months virtually every industry pundit and major-company CEO (Michael Spindler excepted) has weighed in for or against the notion that stripped-down systems, relying on Internet connections and network-resident applications, could revolutionize both corporate and consumer computing.

With all due modesty, I think they're barking up the wrong tree. Maybe someday, when Internet access is cheaper, faster and more reliable; affordable bandwidth has at least tripled; and tools such as Java have matured, this paradigm will take hold. But in the meantime, the big opportunity I see arising from the Internet explosion — particularly in the home and small-business markets — is not in dumbing down the personal computer, but in beefing up an even more ubiquitous device: the telephone.

Killer apps

Stop and think about what's driving the current cybersurge. So far, there are two killer apps: e-mail and Web browsing. A personal computer makes a fine platform for such activities, but it's hardly a necessity — all you really need is a display, a keyboard, a modicum of processing power and an Internet connection, along with mail and browsing software.

Recognizing as much, a number of vendors are racing to deliver Internet stations that could be marketed at a fraction of the cost of a Mac or Intel-standard PC; the NetSurfer from Acorn Computers Ltd., for example, is expected to carry a price tag of only $299 when it hits the U.S. market this spring.

But the NetSurfer and most of its rumored competitors are designed to use a television for display, and though that cuts costs, to me it's a crippling flaw. It all but eliminates the business market — how many bosses want to put a TV on their employees' desks? Even for the family and home-office markets, the TV makes a lousy Internet terminal. The Internet, including the Web, is still mostly text-based, and TVs aren't made for reading (much less writing) text.

Besides, TVs are usually located in parts of the home used and furnished for relaxation, but the Internet isn't yet an entertainment medium. Easy chairs eight, 10 or 15 feet from the screen are hardly ideal settings for what most people really do online: gather and exchange information.

Phone home

These activities, however, are natural extensions of what we already do on the phone. I think many consumers who don't need or can't afford a home computer could appreciate the value of a phone with Web and mail capabilities; likewise, families who already have a computer in the study might want "net phones" in other rooms. At the right price, I'd cheerfully buy one for my mother and another for my family room.

At least one major company already offers such a device, but there's plenty of room for alternatives, and Apple is in many ways well-positioned to take on the challenge. More on those issues next week. □

Henry Norr, editor emeritus of MacWEEK, welcomes feedback in the MacWEEK forums on CompuServe or eWorld or at henry_norr@macweek.com.

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LETTERS

Development on target

I must take exception to Ken Kashmarek's letter (MacWEEK, Dec. 11, 1995, Page 33) discussing how Apple misses the mark when it comes to developer services. Developers do *not* have to maintain an AppleLink account. I have not had one for six months. AppleLink is old and slow. Almost all (and by now, probably all) developer services are available on the Internet. Developers can e-mail Apple from any Internet account. Developer seed versions of software, tools, "Inside Macintosh" and other material are all available from various Web and FTP sites. Even the developer price list that Ken complains he cannot get is available on the developer Web site, although you must have an account and password to get at it. These things have all been explained in Apple Directions (also available on-line) and in several letters from Apple Developer Services.

I believe Apple has made great strides in assisting developers and making us feel more in the fold than ever before. We now have timely (FTP) access to beta copies of major system components and the entire system itself. (There have been at least four major 7.5.3 and System Update 2.0 seeds in the past 30 days.) Questions and bug reports are responded to via Internet e-mail far more efficiently than in the old AppleLink days.

And, no, I am not connected with Apple except as a registered developer and a very happy one at that.

Dennis Jenkins
Indian Harbour Beach, Fla.

7500 no nightmare

I deeply appreciate MacWEEK's dissemination of information about problems and oddments with the PCI Macs, but you might also point out the positive side: that is, that Apple is helpful in solving these problems.

I was worried that my new Power Mac 7500 was going to be a nightmare, but the personnel at the Apple tech support line knew exactly what to do for each problem I ran into. I had it working great in a couple of days. I did have to wait a *long* time for this machine (more than two months), but it is stable, smooth and very fast. Now that the bugs are being worked out it is plain that Apple has a real winner with these computers.

James H. Swift
Scripps Institution of Oceanography
University of California at San Diego

Conflicts drag Mac down

Ric Ford's MacInTouch column (MacWEEK, Dec. 11, Page 64) was right on the money. The greatest feature of the Mac has always been ease of use. Unfortunately, more often than ever before, applications, INITs and cdevs refuse to associate with one another.

Macophiles are too worried about recapturing the competitive edge over Windows users. While it is true that overall productivity between users of the two operating systems has never been closer, this is because System 7.5 and applications written for it are not as reliable as with previous versions of the Mac OS. The advances that will be delivered with Copland are sure to be plagiarized and supermarketed by Microsoft Corp., so there will never again be a significant difference in OS features. We need to differentiate Macs in the reliability arena.

Dr. John Chryssochoos
Emory University Department of Surgery
Atlanta

Young at heart

I found your "Christmas is carnage" (MacWEEK, Dec. 4, Page 3) essay somewhat offensive in its insinuation that those of us who choose to play first-person-perspective shoot'em-up games can somehow be equated with 11-year-old children. While I can understand your desire to see a greater variety of Macintosh entertainment software (or a greater variety of titles in any category), it is not your place to pass judgment upon the users.

Matt Blackman, system engineer
Catalink Direct Inc., Edison, N.J.

Do better research

We were happy to see MacWEEK focus an article on networking in the pre-press industry (MacWEEK, Nov. 27, Page 34), but bewildered that there was no mention of Xinet Inc.'s Open Prepress Interface (OPI) server, FullPress. Our AppleTalk products for Unix serve close to 100,000 networked Macintoshes worldwide. You suggest that your readers choose wisely when deciding on an OPI product, and we couldn't agree more. We just hope your readers do more market research than your writers.

Tony Rotundo
Communications manager
Xinet Inc.
Berkeley, Calif.

How to contact MacWEEK

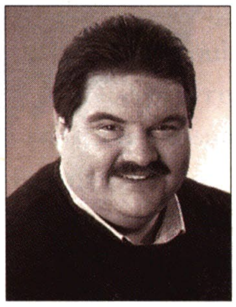
Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3651. We can be contacted on-line: CompuServe, 76077,1351; eworld, MacWEEK; MCI, 323-1203; Internet, letters@macweek.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.

THE MAC MANAGER DON CRABB

Web developers can open Mac corporate databases

1996 has arrived. Once more we can renew our belief that maybe, just maybe, this year the Mac will get reasonably equal access to all our corporate data living in SQL and Open Database Connectivity-compatible files on our mainframes and departmental Windows NT servers. Some smart-as-a-whip developer should make this belief a reality.

The use of proprietary and specialized database tools has not given us what's necessary so far. And Microsoft Corp. says *nyet* to giving us Mac versions of the predominant Windows database and database language (Microsoft Access and Visual Basic). What can we do? Wait till next year, again?



Tools for the trade

Savvy developers will understand that Mac managers will buy access and application tools for SQL and Open Database Connectivity, or ODBC, if their delivery layer is the right one. And the right one from now on is the Web. Specifically we need three kinds of tools:

1. A techie development system (call it WebBase) to create secure Web applications that can query and update existing SQL and ODBC-compliant databases. It doesn't matter whether WebBase builds on Java, CGI (Common Gateway Interface) scripts, Metrowerks Inc.'s upcoming Web products or something new. It should be object-oriented, allowing access to current widget libraries, and it must be possible to prototype an access front end in less than a day.

WebBase should be developed to be fully OpenDoc-compliant and it should work with the Cyberdog tool kit. In fact, developers must be able to use WebBase to build OpenDoc/Cyberdog parts that work with any existing application or context, not just in a Netscape Web browser. WebBase should give developers logging and security tools to plug potential holes before they open.

2. A management tool (WebQuery) that makes it easy for any Mac manager to build an ad hoc SQL or ODBC query form on the Web and let that form be used for straight data entry by others. This tool could be part of the WebBase product. WebQuery should use a pure object-oriented building-block approach that's part and parcel of the best of OpenDoc, Cyberdog and AppleScript.

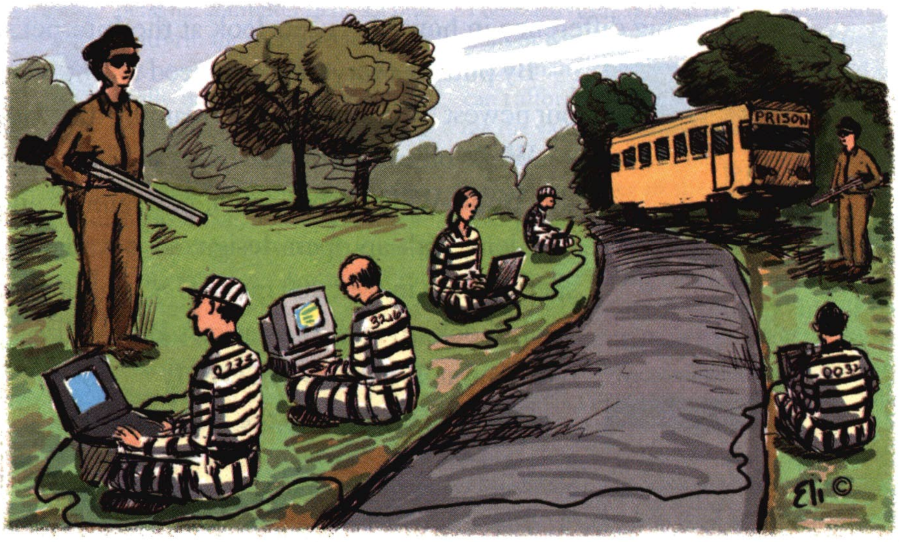
3. An end-user tool (WebUser) that makes it a snooze for everyone from data entry temps to keyboard-impaired executives to find the info they want and update the areas of the SQL or ODBC databases they have access to. WebUser would need to mimic some popular current Mac database interface, probably Claris FileMaker Pro, for it to win over the masses.

Getting there from here

Which brings me to my final point. WebBase, WebQuery and WebUser are really just object-oriented, Web-cognizant, OpenDoc- and Cyberdog-aware versions of FileMaker Pro 3.0 (which has gained its own dandy proprietary relational capabilities).

Perhaps a joint effort among Claris, Metrowerks, Apple and a database expert such as ACI US Inc. could produce a FileMaker WebBase, FileMaker WebQuery and FileMaker WebUser. These products would extend the FileMaker interface to the Web and make it the interface layer of choice for any Mac manager trying to access and manage all that tasty SQL and ODBC data we're locked out of now. □

Don Crabb welcomes comments at his Internet address decc@cs.uchicago.edu. You can also check out his home page at http://cs-www.uchicago.edu/~decc/.



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Comments? Ideas? Contact Eli at elitoons@aol.com

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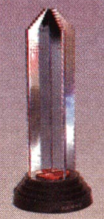

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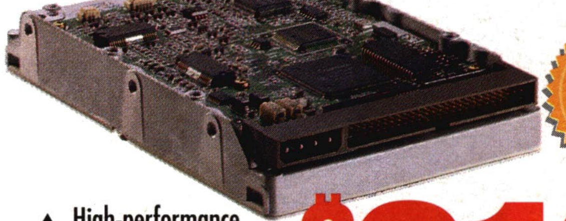

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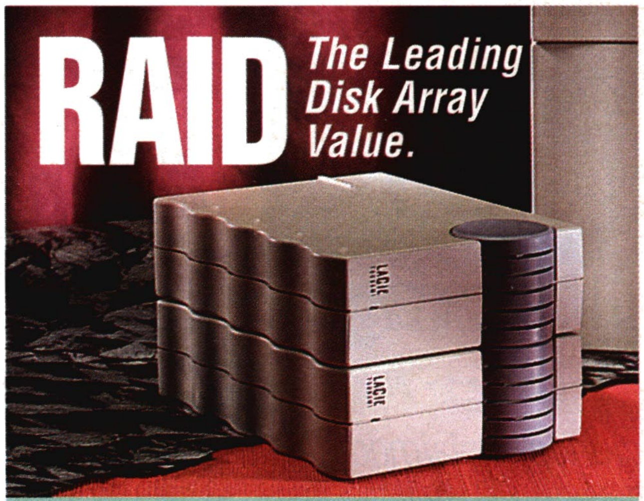

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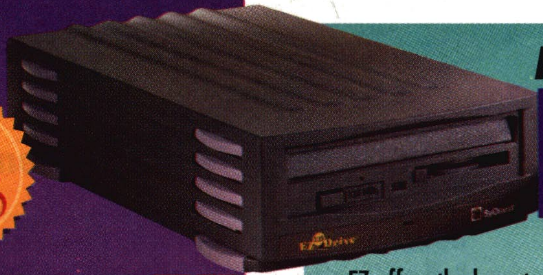

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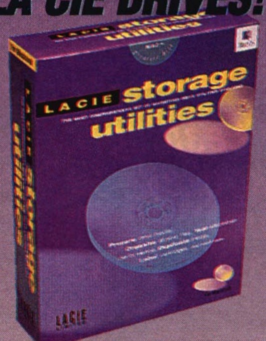

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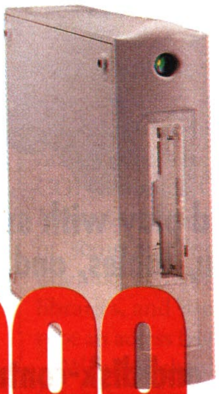

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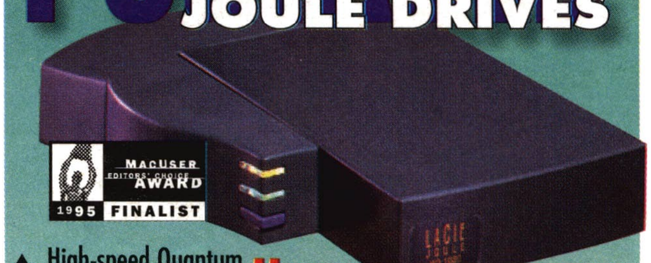

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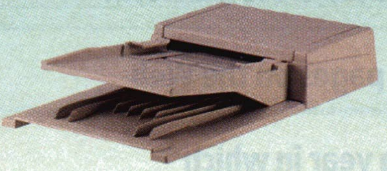

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The State of Mac Management 1995

The Power Mac 7100 ranks as the most popular Mac model. Respondents, still hesitant about Mac compatibles, eagerly look toward the PowerPC platform for potential cross-platform solutions. Publishing home pages on the Web catches on like wildfire. In a year in which Apple was beset with equipment shortages, PowerBook problems and the onslaught of Windows 95, Mac managers stuck it out. Will the loyalty continue? Our guest editorial offers Apple advice. Other stories look at the promise of the PowerPC platform as well as clone-buying and the home-page rage.

Methodology

The MacWEEK 1996 State of Mac Management survey was conducted by telephone using a centrally monitored WATS interviewing facility. The sample consisted of a representative list of 1,500 MacWEEK subscribers. Value-added resellers, value-added dealers, computer-related retails and distributors were excluded.

Interviews were conducted between Oct. 25 and Nov. 8, 1995.

Market Probe International of New York, an independent market research company, was responsible for all survey details. All procedures were carried out in strict accordance with standard research practice.

Web fever soars; clone buying slow

By MacWEEK research staff

MacWEEK's annual State of Mac Management is the survey in which we closely monitor key issues affecting Mac managers in their daily work life. This study looks in detail at future Mac purchasing, operating system issues, use of file servers, in-house development and Mac vs. Intel-standard PC maintenance, as well as which models are rising in popularity and whether clones will expand the Mac installed base.

Eighty-five percent of respondents purchased a computer using the Mac OS from August through October 1995. Nearly all of them purchased a desktop Mac (98 percent), half bought Mac PowerBooks or Duos (47 percent), and one in four (26 percent) bought a Mac OS server. But Mac compatibles were purchased by just 3 percent of respondents.

The popular Power Mac 7000 series, the lowest-cost upgradable Mac series, is in the hands of 41 percent of respondents. Overall, three quarters of respondents (79 percent) bought Power Macs. Purchases of 6000- and 8000-series Power Macs were even: (28 percent and 26 percent, respectively). One in six purchased the top-of-the-line 9500 series Power Mac (17 percent).

Buying standard configurations (established by individual companies) is commonplace: 83 percent purchase Macs according to some kind of prescription; 18 percent also purchase nonstandard Macs.

Nearly one in four (23 percent) in the August-through-October time frame purchased hardware or software to run Windows. Among these, hardware and software emulators were bought in about equal proportions.

Future purchases

Ninety-two percent of respondents plan to purchase a desktop Mac OS computer in the next 12 months. Power Macs top that list of planned purchases in the next year (88 percent). Nearly two-thirds plan to purchase a 7000-series Power Mac, one-half an 8000-series, and about two in five either 9500-series or 6000-series Power Macs.

Our findings indicate that Mac compatibles may detract from Apple sales rather than expand the Mac's installed base. Twenty percent of respondents said they will buy Mac-compatible computers in the next year. Of that group, 85 percent said they would buy the same number of Macs if compatibles were not available, indicating that these sales would have gone to Apple. Among those who did not plan to buy Mac compatibles, two-thirds gave Apple product satisfaction as the reason.

Forty-three percent of respondents said they would purchase more PCI than NuBus cards in the next 12 months. About one-third said they would purchase the same amount and 15 percent said less.

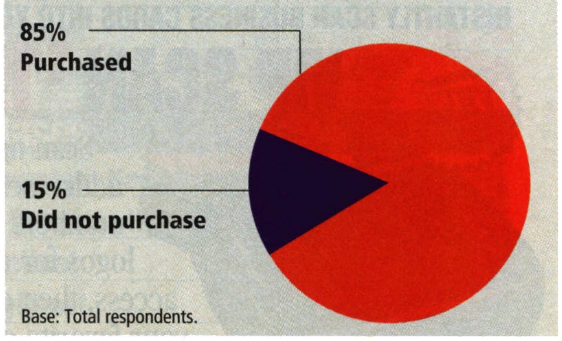
OSes and new technologies

Windows 95 has not yet penetrated into half of respondents' sites, but it's getting close: 43 percent report Windows 95 is installed at their site. Respondents were united in the opinion that the Mac OS is safe from Windows 95 for now: More than three-quarters said Windows 95 was not at all likely to replace Macs currently installed or planned for purchase in the next 12 months.

System 7.5 has achieved nearly total penetration of respondents' sites (97 percent vs. 53 percent last year). However, while it's commonly found at sites, System 7.5 is not found on all Mac OS machines: only 18 percent report that all their Macs run System 7.5 while the majority (52 percent) say that System 7.5 runs on fewer than 60 percent of their Macs.

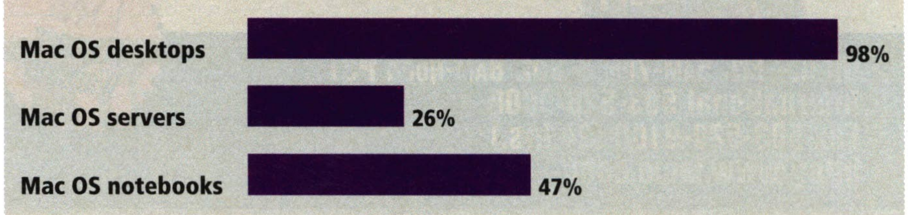
See Survey, Page 48

Mac OS computer purchasing in the past three months



Base: Total respondents.

Types of computer systems purchased in the past three months



Base: Respondents who purchased Mac OS computer in past three months.

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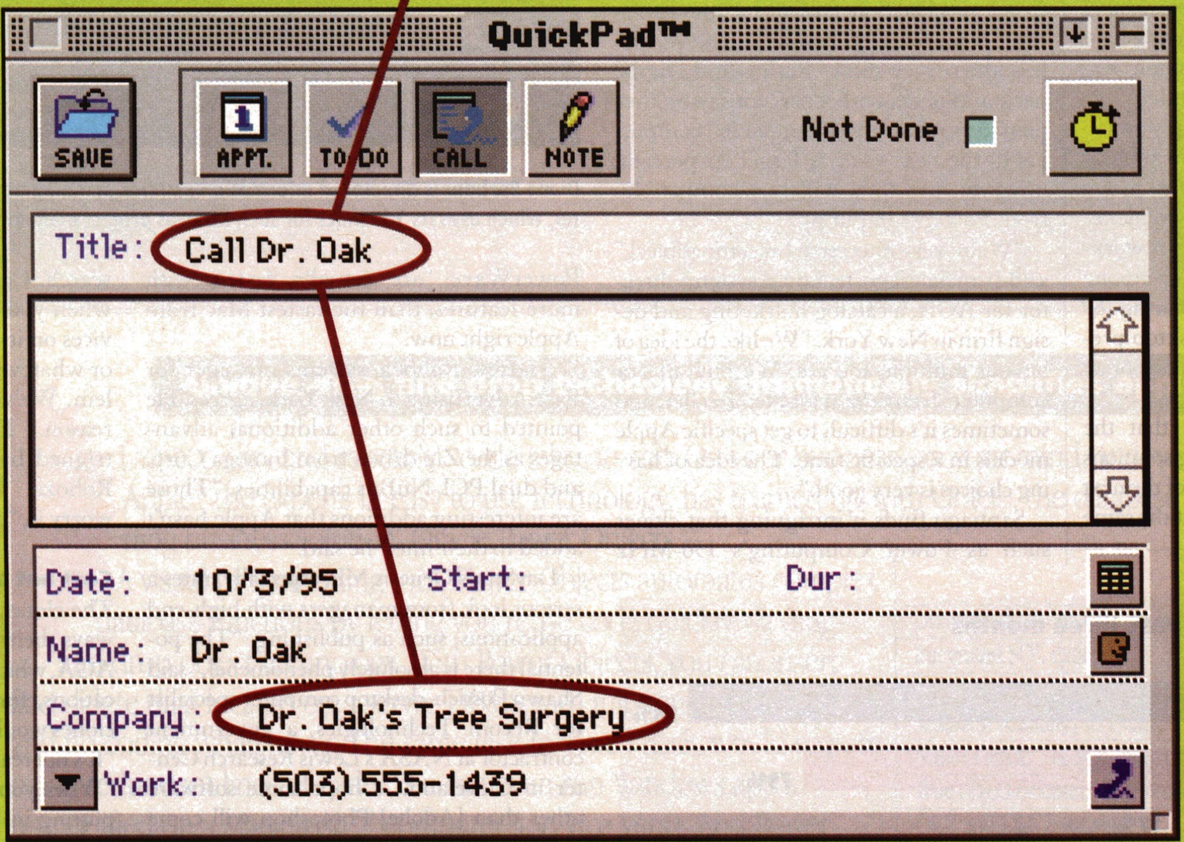
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Survey

From Page 46

A large majority of respondents (67 percent) said that they would rather see Copland released later, when all the features of the OS are available, than sooner, with some features missing. Though they are in the minority, the 32 percent that would rather see Copland sooner is a big enough group to ensure that, no matter what Apple does, a large number of people will be unhappy.

Of the new technologies likely to affect upcoming purchase plans, the PowerPC Platform and Copland were rated as important by a similar number of respondents (40 percent and 38 percent respectively). OpenDoc was rated important by one-third and 20 percent rated OLE important.

Internet and workgroup computing

Seven out of 10 respondents work in sites that access the Internet, primarily for World-Wide Web browsing (95 percent), e-mail (92 percent), and as an information or data source (90 percent).

Two-thirds of respondents at sites that access the Internet have home pages. Almost all these home pages are used for information dissemination (97 percent) and a large majority of them for advertising or marketing purposes (71 percent). And 60 percent of those respondents who don't currently have home pages said their organization was likely to create one in the next months.

Workgroup computing or simply working collaboratively (as distinct from applications designed specifically for workgroup computing) is very common at respondents' sites (96 percent report some type of workgroup computing taking place). Top among the most common uses are file sharing (89 percent), e-mail (79 percent), desktop presentation (74 percent) and access to corporate databases (55 percent).

Overall, respondents indicate that the market for groupware computing solutions will grow to 85 percent by the end of the next 12 months. Growth rates are about the same for the individual applications. ☐

Managers consider the clones and favor known quantities

By Jim Leeke

The first generation of Macintosh clones resembles a movie that bursts into theaters wrapped in a buzz of expectation. It has sparked favorable press and a goodly amount of excitement, but it's too early to say whether a thumbs up from the critics will translate into continual long lines at the box office.

This year's State of Mac Management survey reports that from August through October 1995 3 percent of those surveyed bought clones.

Although the initial Mac compatibles are reaching the workplace slowly, often singly or in pairs, many Mac managers already have favorites. They express serious interest in clones from Power Computing Corp. and DayStar Digital Inc. but less in those from troubled Radius Inc. Nevertheless, the survey shows Radius and Digital neck and neck, with 4 percent saying they plan to purchase those companies' computers in the next year. A larger 15 percent, however, say they will buy compatibles from Power Computing.

"We're very interested [in compatibles]," said Ivan Santiago, technical systems director for AGA, a catalog marketing and design firm in New York. "We like the idea of having multiple sources. We buy all our computers from a value-added reseller, and sometimes it's difficult to get specific Apple models in a specific time. The idea of having choices is very good."

Santiago finds it intriguing that clones such as Power Computing's 150-MHz PowerWave "are actually faster, with more features, than the fastest Mac from Apple right now."

LISA QUIÑONES/BLACK STAR

Diane Barbour is director of information systems planning at the David Sarnoff Research Center, which uses its 700 Macs for such tasks as project planning and creating presentations.

Andrew Rohoza, systems manager for Pace Advertising in New York, agrees. He pointed to such other additional advantages as the Zip drives from Iomega Corp. and dual PCI-NuBus capabilities. "Those are interesting additions that Apple hasn't added to their line," he said.

DayStar's Genesis MP, especially, rates a serious look from managers with high-end applications, such as publishing. "The potential there is absolutely phenomenal," said Shawn Postich, desktop computer specialist for Recom Technologies, a government contractor at NASA's Lewis Research Center in Cleveland. "I hope some software other than [Adobe] Photoshop will come along that will take advantage of it. With something like the DayStar Genesis, there is literally power to spare."

Other managers, in contrast, greet the hype over clones with yawns. Even clone supporters cite such basic concerns as the staying power of some manufacturers. "I'm not too impressed with the Radius [clone], just because of the difficulties the company has," said Mark Carter, business operations manager for TransitCenter in New York.

Managers worry, too, about compatibility and product support for the clones. "I've heard that if you're going to buy one and just use it as it is, you're fine," said Diane Barbour, director of information systems planning at the David Sarnoff Research Center in Princeton, N.J. "But when you try to upgrade it or switch devices on it — buy a third-party hard drive or whatever — you might run into a problem. We've stayed away from it for that reason." Even some Mac managers intrigued by clones voice similar concern. Rohoza, for instance, said his biggest worry is, "can I use off-the-shelf parts?"

Cost not a factor?

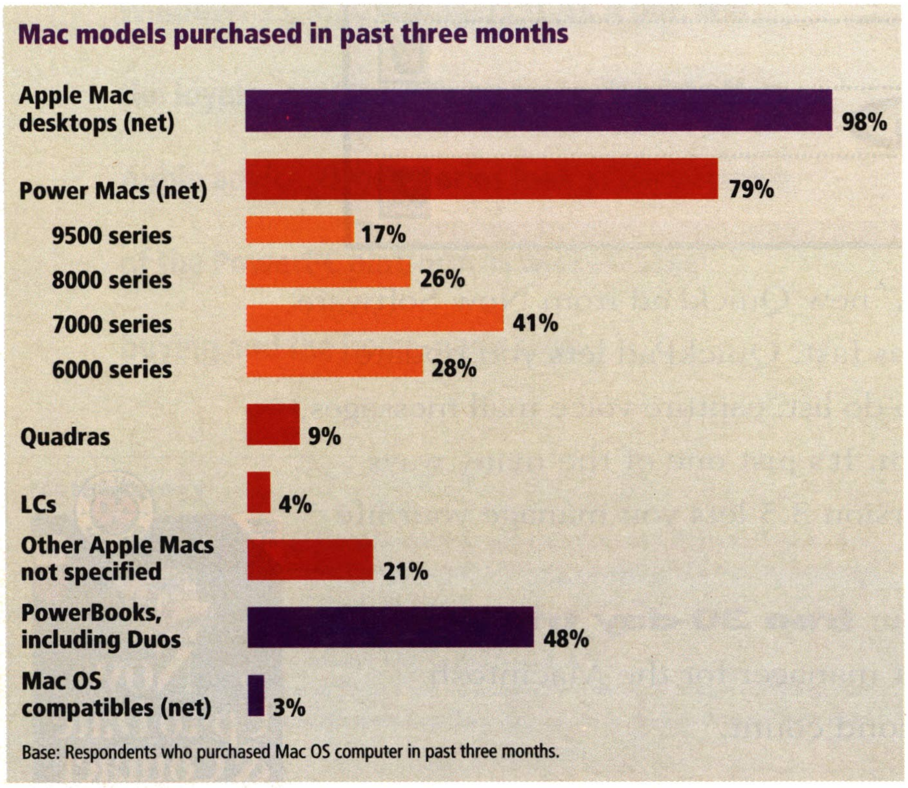
The clones' perceived lower cost is not always their biggest selling point, either. At AGA, which has high-end publishing applications, for instance, any decision to buy clones would be based on muscle and speed. "It's not really driven by cost," Santiago said. "When you start adding up the features and putting in the things we need, they really start coming out very similar [to Macs] in terms of costs. When you're talking about a machine that's costing you $20,000, $500 here or there is not going to make or break you in the long run. It really ends up being performance [that counts] for us."

In organizations such as colleges or government agencies that already enjoy deep discounts, price differences can shrink or disappear altogether.

"We get pretty good prices on Macintoshes because they're bought through a state contract," said Tom Reeves, professor of instructional technology at the University of Georgia in Athens.

Scott Sandstrom of the College of the Holy Cross in Worcester, Mass., agreed that

See Clones, Page 50



Base: Respondents who purchased Mac OS computer in past three months.

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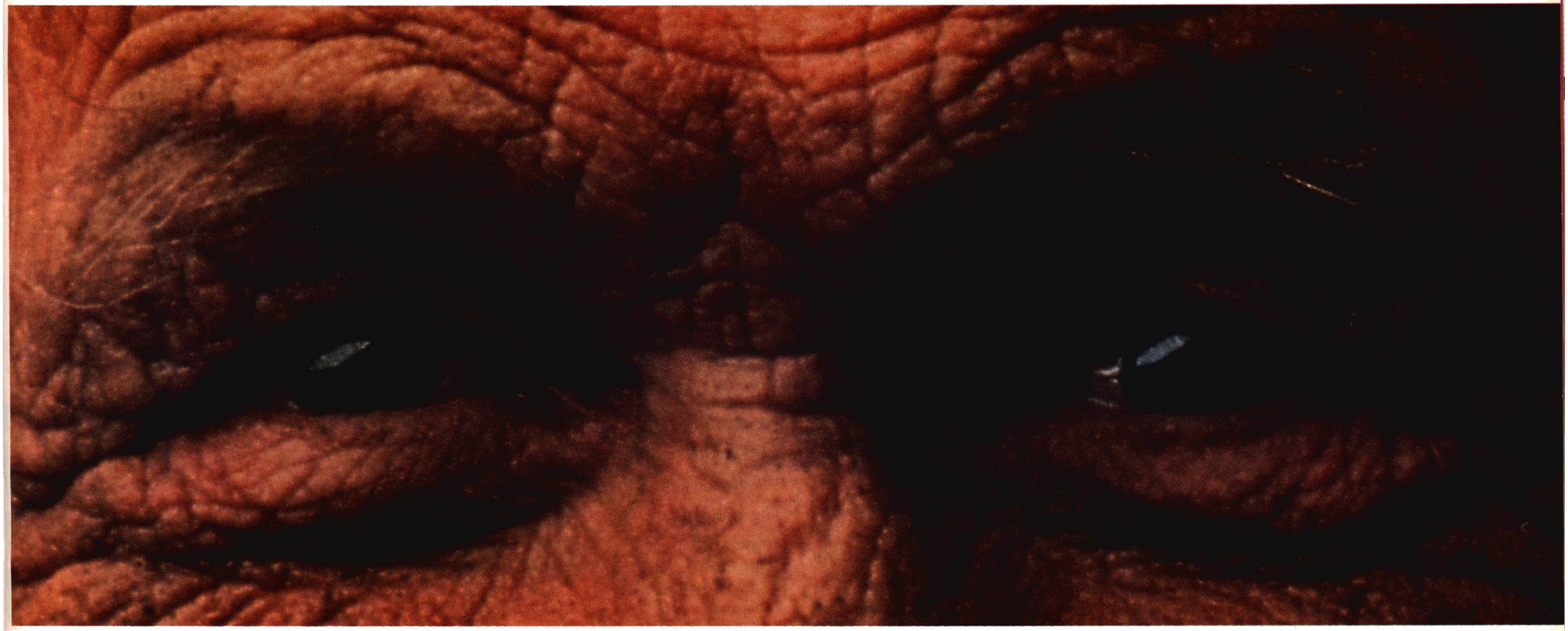

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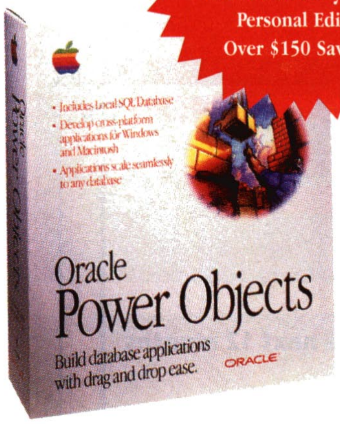
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Most common configurations purchased in past three months

	STANDARD	NON-STANDARD
RAM installed		
8 Mbytes	22%	9%
12 Mbytes	5%	5%
16 Mbytes	40%	30%
32 Mbytes	19%	19%
64 Mbytes or more	7%	23%
Hard disk capacity		
Less than 500 Mbytes	21%	12%
500 Mbytes - 1 Gbyte	53%	42%
More than 1 GByte	22%	44%
Display size		
15 inches	39%	26%
17 inches - 19 inches	36%	51%
21 inches	13%	16%
Graphics card		
On-board	68%	61%
Separate card	14%	23%
Neither	14%	12%
Network card		
On-board	76%	79%
Separate card	14%	7%
Neither	7%	9%

Base: Mac OS desktops purchased in past three months. Note: Percentages don't add to 100% due to don't know/no answers.

Clones

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consortiums and Apple educational discounts narrow any pricing gap for many schools. "Their prices are probably 15 percent lower than you could get them at a discount store," Sandstrom said. "If you do the math, it's a negligible difference."

Some Mac supporters believe that the clones are overdue, perhaps disastrously so. "I just think Apple has botched the whole cloning idea," said Sandstrom, an associate professor and computer coordinator in the Holy Cross economics department. "They waited way, way too long. They gave the market away. If they had done this in 1990, I think they'd have a third of the market now, or half of it."

Mac managers also have elephantine memories. Many remember the glitches that plagued the early IBM compatibles and hope that by imposing strict licensing and testing requirements Apple can now avoid similar troubles. "I would trust Apple to have a good hold on what [clone] companies are doing," Santiago said. "It's in Apple's interest that clones prosper and be compatible."

Other, less sanguine managers voice concerns that center specifically on Apple compatibles. "We had a really bad experience with the last round of clones," said Sarnoff Research Center's Barbour, namely relatively inexpensive clones called Notebook Systems from Outbound Systems Inc. "We did get one of those, thinking it was a good deal for about half the price," Barbour recalls. "It just never worked."

Some sites simply follow the standard bearers. Holy Cross, for example, is "predominantly an IBM campus, and if it's not an IBM, it's a Macintosh," Sandstrom said. "Some [Compaq machines] have [also] crept in. But we have stayed away from no-name brands or new-name brands. I don't think you'll find any [Gateway 2000 machines] or anything like that on the campus, other than what the faculty have purchased on their own."

When to buy

In those places where they exist, interest in and enthusiasm for the new clones don't necessarily translate into quick sales, either.

"We haven't splurged yet because we haven't had the need," Santiago said, a comment echoed by others. Although AGA might buy 20 or 30 computers on an annual schedule, "I wouldn't be buying 25 Power Computing clones in the next week or so. But probably for the next computer we purchase, I'll say, 'Let's get a clone. Let's test it out, put it through its paces.' "

What about the feds?

Clones are slow to reach even such large customers as the federal government. At NASA-Lewis, for example, Postich was unaware of any in use.

Still, the clones are creeping in. An engineer and longtime Mac user at an East Coast laboratory said his site has acquired a few Power Computing compatibles, and "people are very happy with them. I'm very hopeful that the PowerWave machines with both NuBus and PCI ... will really take off. If they can keep their robustness, I think they will."

Postich, too, said he believes that it is only a matter of time before clones filter into NASA-Lewis. In addition to buying through the GSA Schedule for federal projects, government contractors can use their own funds to buy computers for company use. "From that perspective," Postich said, "I can see a lot of [clones] start to roll in."

If not clones, then what?

What sorts of machines are Mac managers buying if they're not selecting clones in large numbers? The choices are as varied as the user sites. When Pace Advertising bought new machines last July, Rohoza considered PCI-equipped Macs. "But they weren't as stable as they should be," he said, "so I opted for the [Power Mac] 8100s. They're working wonderfully for us ... but we're always looking for faster. We're

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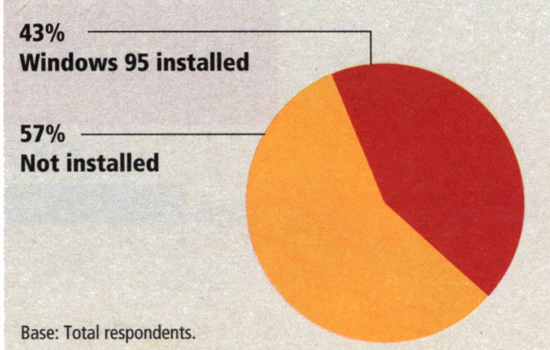
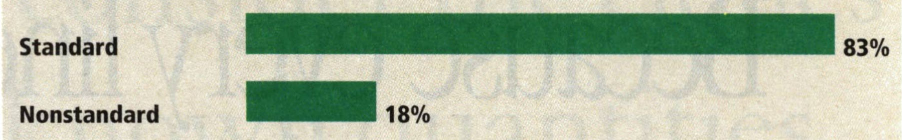
Incidence of Windows 95 on computers at respondents' sites



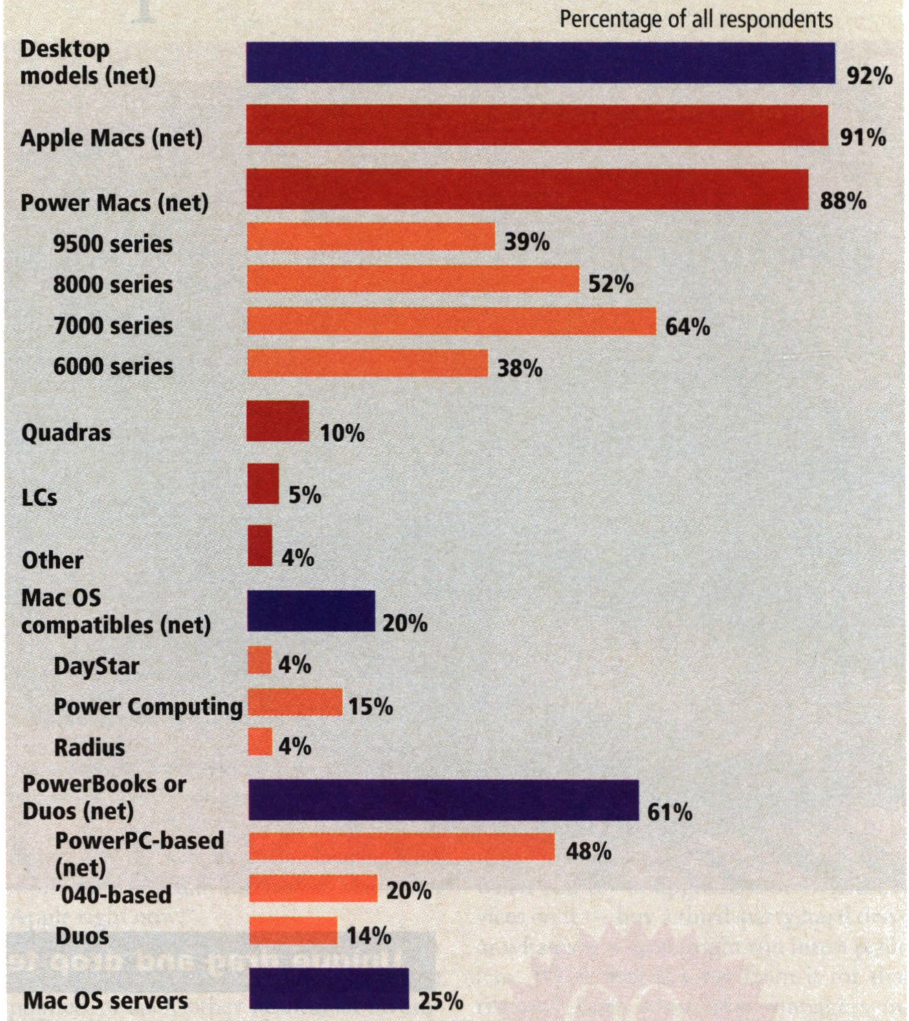
Base: Total respondents.

Mac purchases to standard and nonstandard specifications



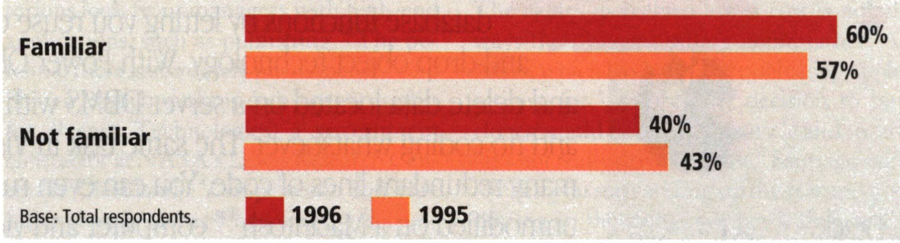
Base: Respondents who purchased Mac OS desktop computer in past three months.

Purchase plans for Mac models in next 12 months



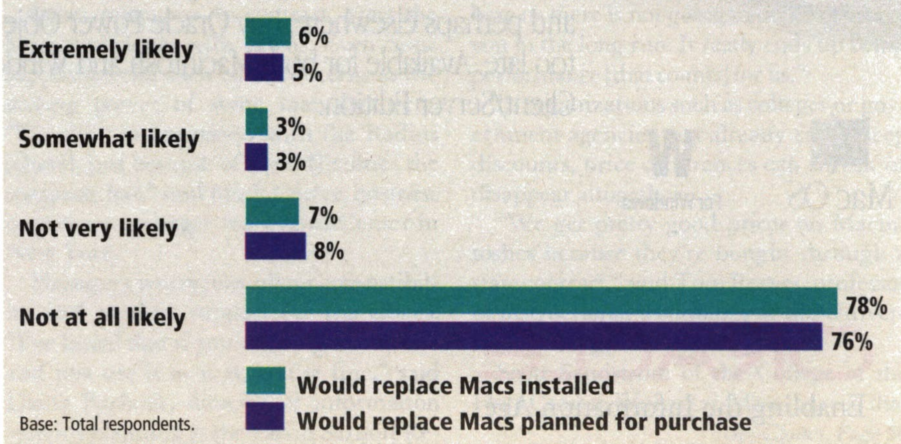
Base: Total respondents.

Familiarity with Windows 95 (compared to 1995 State of Mac Management report)



Base: Total respondents.

Likelihood of Windows 95 replacing Macs in the next 12 months



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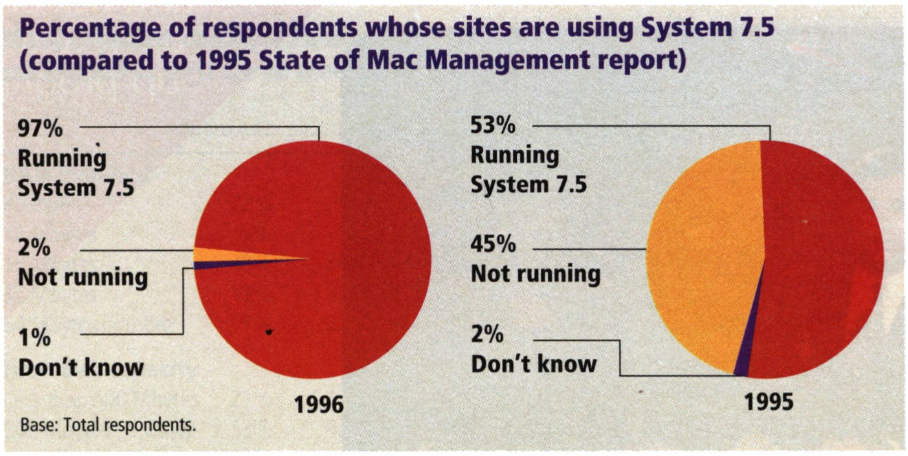

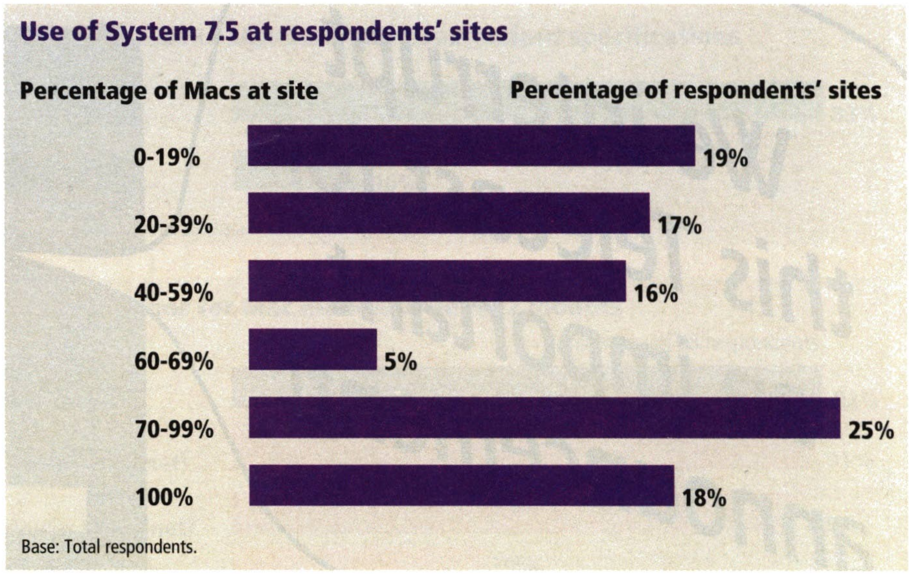

Clones

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in the graphics field, so every little bit of speed helps." Carter also opted for PowerPC-based Macs when equipping a new sales force at TransitCenter last year, buying 6100/60s and 6100/66s.

Professors at Holy Cross have a choice of several machines. One-quarter of the faculty members receive new computers every year, Sandstrom said, choosing from a list that includes low-end PowerPC 6100s, low-end Pentium-based PCs (from either IBM Corp. or Compaq Computer Corp.), a laptop PC or PowerBook. At the University of Georgia in Athens, Reeves received a grant early this year that allowed him to buy 75 PowerBooks.

Many Mac users, however, simply don't need even that much digital horsepower. "We just bought a bunch of LC 475s, real cheap," said Jon Sutton, a technologist for VideoGuide Inc. of Bedford Mass. The refurbished machines have enough power for his mainline applications, such as word processing, e-mail and World-Wide Web and server access.

"The main thing we need is memory," Sutton added. "Speed is not the issue." Even companies with high-end applications, such as AGA, find office uses for Apple's slower machines. "On the low end, I don't really see much competition for Apple," Santiago said. For common business applications, "Apple has a lot of Performa models that are perfect for what we do."

To make deeper inroads into the Mac market, Barbour said, clone makers face a Catch-22. Buyers remain uninvolved until they see more clones in everyday use and talk to more satisfied users, which means someone must start. But since she is already "a guinea pig for so many other things," she added, "I'm going to let somebody else do this one."

The size of the organization might also affect willingness to try the new clones. Mac managers "have to find that extra money to play around with the compatibles," Rohoza pointed out. "On a smaller scale, it's difficult." A large corporate site has the muscle to get loaners, demos and attention from a manufacturer. "But if I have to go and explain to people above me, 'I need more money to take a look at this possibility that we might like or we might not,' I can't do it," Rohoza said.

Word of mouth about the various clones "is pretty persuasive," said Todd Hill, production manager for Foca Co., a New York textbook developer, "because [people] have good things to say." Many users say they'll give clones serious consideration in their next round of buying. Although she has reservations, Barbour said, in time, "if we had a really high-end application here, for publishing or graphics, we might try a high-end [clone]."

At the other end of the spectrum, VideoGuide's Sutton agreed. "We will probably consider the clones, just like any other Mac," he said. "We're not that picky." □

Macs drafted into the U.S. Army

Tim Winter finally has his Macs. And what Macs they are: 45 brand-spanking new Power Macs, which he brought into the U.S. Army Corps of Engineers to handle the New England Division's GIS computational duties.

More impressive, those 45 Power Macs fit into a network of six Microsoft Corp. NT/AS servers, two Sun SPARCstations running the Informix Software database and 45 Intel-standard PCs now running Windows 95 on Intel 486 processors. And it was Winter — senior project manager, civil engineer for the Corps' Regulatory Division — who built the whole system a mere 18 months ago. It took six years for Winter to convince the division's Information Management Directorate in Waltham, Mass., to buy anything from Apple.

"I had wanted to buy Macs back in 1988, but I was turned down," Winter said, explaining how he had the luxury of creating a new network from scratch. "I was told Macs just weren't allowed."

What prompted the IS office's change of heart was the need for GIS, or Geographic Information Systems, data and graphics. Computationally intensive, GIS has become a critical tool for nearly all government agencies trying to balance the requirements of preservation and development.

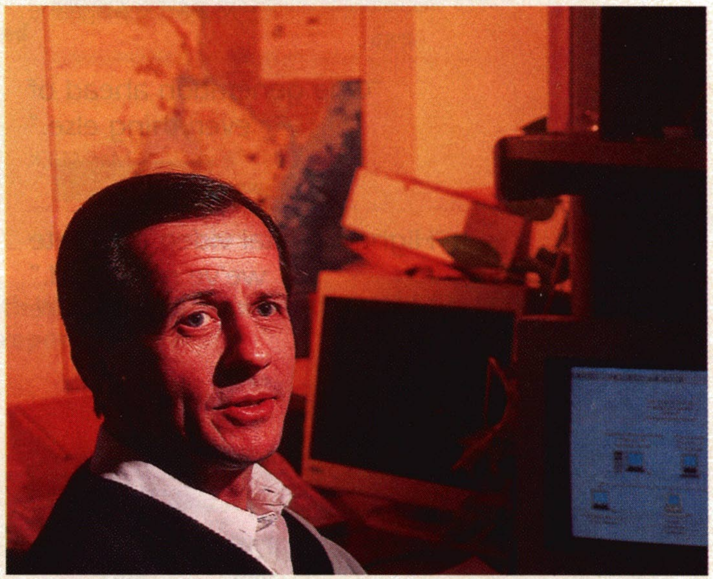
For the Corps' New England Regulatory Division, also in Waltham, those efforts include finding where to unload soil from the area's navigable waters while inflicting the least damage to endangered species, archeological sites, state historic preservation areas and water-loving snakes. GIS software makes such complex interactions instantly visible.

That's why about two years ago Winter's group made its first forays into GIS by accessing the huge databases maintained by the Remote Sensing GIS Center, the Hanover, N.H., arm of the Corps of Engineers' Research and Engineering Laboratory. "They were using Macs and recommended we do the same," Winter said. "With that recommendation, we could justify the purchase."

It was quite a purchase: six 8100/80 Power Macs with 32 Mbytes of RAM and 39 Power Mac 7100/66 machines with 16 Mbytes of RAM. Winter also bought 45 PCs with identical configurations.

All software is cross-platform, including Claris Corp.'s ClarisWorks and Claris Impact. Photos captured with digitizing cameras are manipulated directly from the ClarisWorks documents. Set up as a client-server application, the Arc/Info GIS package from Environmental Research Institute Inc. of Redlands, Calif., now resides on a SPARCstation server running the Informix database. (Although Winter said he expects to move that system onto an NT/AS server running Microsoft's SQL Server, all Macs and PCs access that information using the ArcView query tool.)

Of the six NT/AS servers now in use, one functions as the domain controller; another serves as the backup domain controller and holds SQL Server; a third handles print, CD-ROM and tape backup; a fourth manages Lotus Development Corp.'s cc:Mail, On Technology Corp.'s Meeting Maker and Microsoft's Systems Management Server; and the last two function as remote-access servers.



SETH RESNICK

Tim Winter brought 45 new Power Macs into the U.S. Army Corps of Engineers to help create GIS documents, data and graphics.

"When I presented this system to the deputy division engineer, I stressed that the users are creating all of their documents, all of their overheads and all of their analyses themselves," Winter said. "We don't need a lot of specialized support staff to produce our information."

For now, Winter doesn't plan any additional acquisitions, especially for the Power Macs. For sure, those 486-based PCs will be upgraded with Pentiums, and the division will trade in its thin Ethernet plumbing for a mixed 100-Mbps and 10BASE T system.

But, in the meantime, the New England area can rest assured that the U.S. Army Corps of Engineers is using everything it has to preserve the waterways' delicate ecosystems.

— By Rochelle Garner

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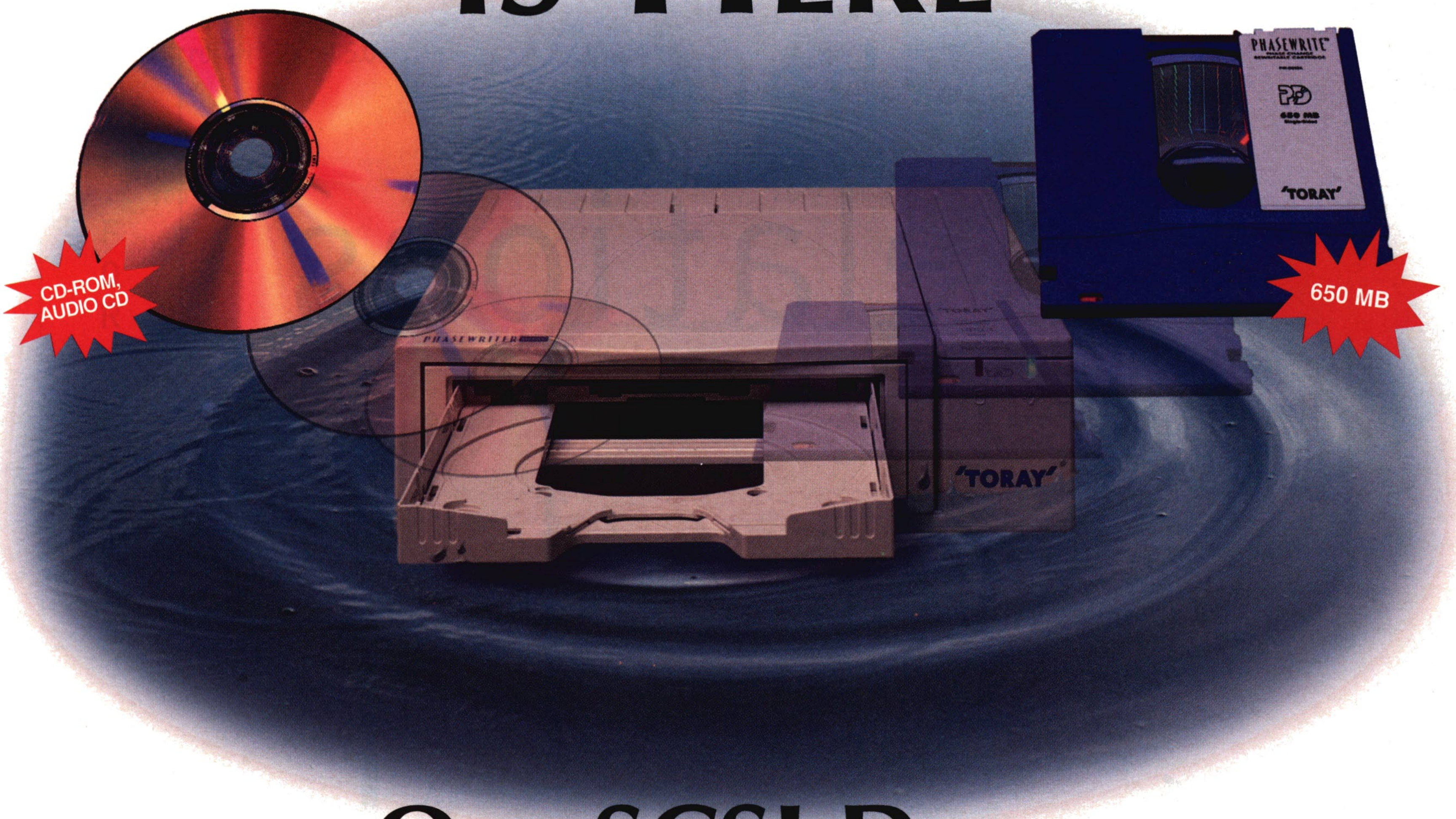

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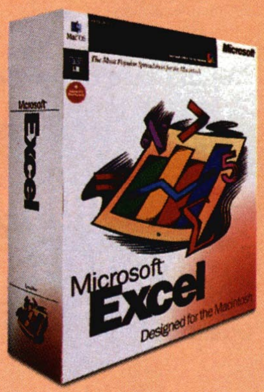

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WHERE DO YOU WANT TO GO TODAY?™

Survey exposes hope for new technologies

By Rochelle Garner

Reliability, productivity and simplicity — these are the benefits Mac managers expect from Copland, OpenDoc and the PowerPC Platform, according to MacWEEK's latest poll.

Of those MacWEEK subscribers surveyed, 40 percent list the PowerPC Platform, or PPCP (referred to in the survey as Common Hardware Reference Platform, or CHRP), as important to their strategic planning. Copland follows close with 38 percent finding it important, and OpenDoc trails with 33 percent.

Of course it remains to be seen whether Copland will become as bulletproof as people think, whether OpenDoc will boost productivity or whether PPCP will truly simplify multivendor support (see story below). What's important now is how managers are interpreting Apple's marketing messages about the ways these technologies will affect the workplace. Apple can show, first, that it's clued in to what managers face and, second, how the Mac OS can best solve their problems and help them stay true to the Mac cause in a Windows-centric world.

Take PPCP — a kind of universal platform that will run the Mac OS, Windows NT, OS/2 and several versions of Unix. Absent from this list so far: DOS, Windows 3.1 and Windows 95. And yet the vision that now dances in managers' heads is of a single configuration that hosts every operating system that ever found its way onto a company's network. Through this commonality, managers hope, will come simpler system management, user support and cross-platform compatibility.

"We're constantly dealing with customers who work on different platforms and operating systems," said Steve Amarillo, computer manager at Sir Speedy Printing in Hampton, Va. "That's why we're looking to PPCP for that one machine that can handle both the Mac OS and Windows 95. For us, it's an issue of compatibility."

For others, the issue is maintenance. "We have a lot of Macs and [Intel-standard] PCs to deal with, and any kind of upgrading will be easier if there's a common platform," said Dennis Lavore, a technician who supports a mixed 60-user network, in which Macs outnumber PCs 2-to-1, at Mitre Corp. in Bedford, Mass. "At least knowing the hardware's the same should make system management a lot easier."

High expectations

It's human nature to hope that having something — anything — in common across an installation will ease system management and support. Unfortunately, not even the most polished crystal ball will reveal the outcome on this one. Too many players and too many variables cloud this prognosis. Still, one effect from PPCP is crystal-clear: It should pass the budget police with greater ease than the Mac usually does.

"The big question is economics," said Peter Jackson, a project manager at the U.S. Army Corps of Engineers, New England Division, in Waltham, Mass. "If we can buy one machine that we can run any operating system on, and if that machine is competitively priced against PCs, then we won't have a problem getting them in. We have to justify every purchase. And if we don't have to buy from Apple, those machines will probably sail through the purchasing department."

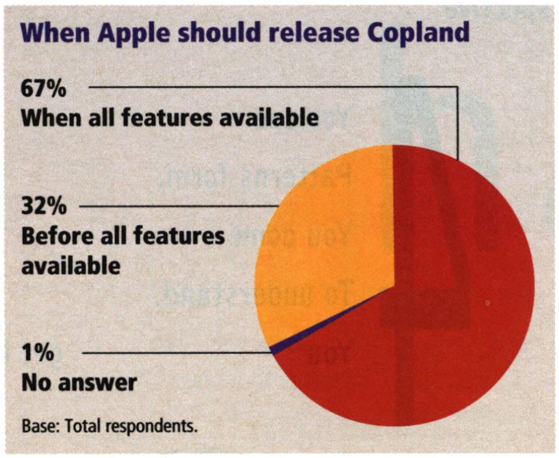
Chances are the immutable laws of supply and demand will satisfy Jackson's hope for cost-effective PPCP machines. As more and more vendors begin to offer this new one-size-fits-all hardware specification, the greater supply should lead to greater choice.

"I don't want to invest in a platform where there aren't as many choices for application software, and I think [PPCP] will open up that range for us," said Jim McDonald, computer scientist and workstation manager at the Naval Research Laboratory's Vacuum Electronics Branch in Washington, D.C. "I think [PPCP] will be an attractive development target."

Given McDonald's line of work — designing high-powered microwave tubes for the military — he's talking about applications in the scientific and engineering realms. Without question, the Mac's repertoire is decidedly weaker in these categories compared with the range available for Unix and high-end Windows machines. Which is why McDonald is placing particular hope on Copland.

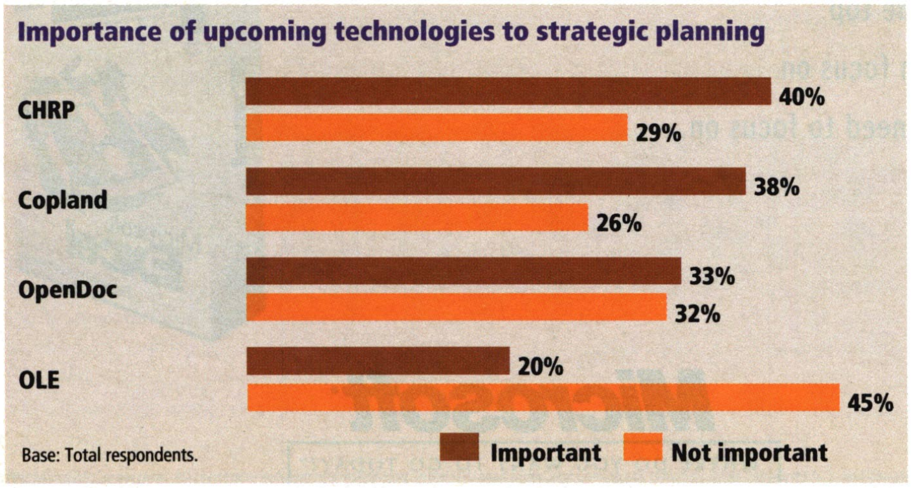
"I expect Copland to be a good example

See Managers, Page 58



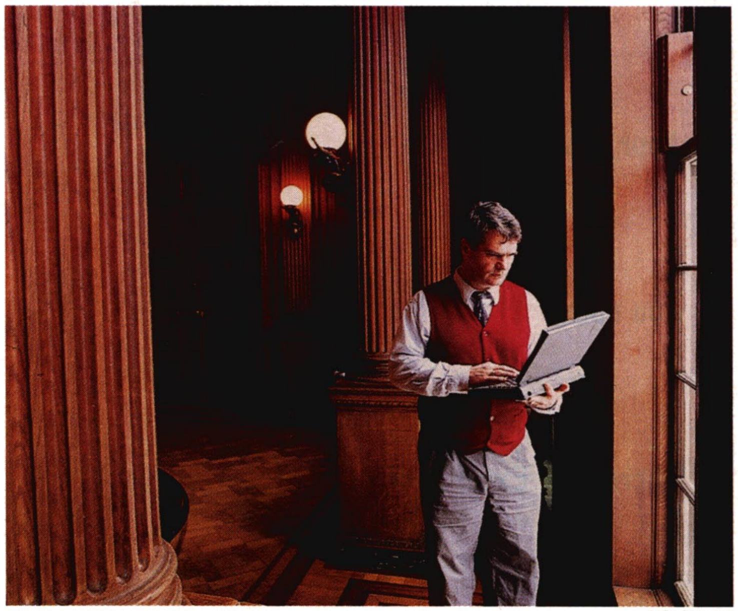
When Apple should release Copland

Base: Total respondents.



Importance of upcoming technologies to strategic planning

Base: Total respondents.



Jon Hemperley, system manager for the Department of Computer Operations at Boston University, is awaiting the reliability he expects from Copland.

SETH RESNICK

TECH ANALYSIS

OpenDoc, Copland, PPCP: Not Nirvana

By Henry Norr

How realistic are Mac managers' high hopes for OpenDoc, Copland and the new unified PowerPC Platform? It won't be possible, of course, to make any definitive pronouncements until real products incorporating these key new Apple technologies begin reaching users — probably this spring in the case of OpenDoc, but not until the second half of the year for the PowerPC Platform and probably even later for Copland. On the basis of the available information, however, it appears that current expectations are a mixture of accurate assessment and wishful thinking.

PowerPC Platform

After more than four years of discussion, Apple, IBM Corp. and Motorola Inc. two months ago released a joint specification for PowerPC-based desktop computers, notebooks and servers. (The document itself is titled, "PowerPC Microprocessor Common Hardware Reference Platform," but for marketing purposes the companies have decided to refer to the standard as the PowerPC Platform, or PPCP.)

Hopes for the new architecture revolve around two basic facts: Compliant systems can be built with industry-standard components, and they will be capable of running all major operating systems that have been ported to the PowerPC.

The former attribute should alleviate many problems that have long plagued the Mac market. With more component suppliers to choose from, Apple should have an easier time overcoming its now-perennial product shortages and responding to changing customer preferences, overall system costs should go down, customers should be able to repair and customize their Macs more easily and economically than ever before, and new technologies that originate outside Apple should become avail-

See Technologies, Page 60

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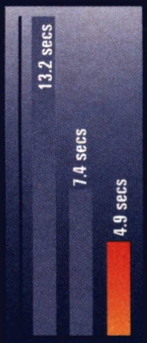

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MacBench 2.0 test performed on Power Mac 8500 24MB of RAM with a 4MB Millennium for PCI Power Mac, 4MB ATI XClaim GA and 4MB 8500 on board graphics chip at 1024 x 768 in 16.7 M colors with Adobe Photoshop 3.0 for Power Mac

Managers

From Page 56

of a modern operating system, with the features that programmers have been asking for," McDonald said. "That's why I'm hoping Copland will generate more-robust and more-efficient applications. Ultimately, the application's the thing."

Applications

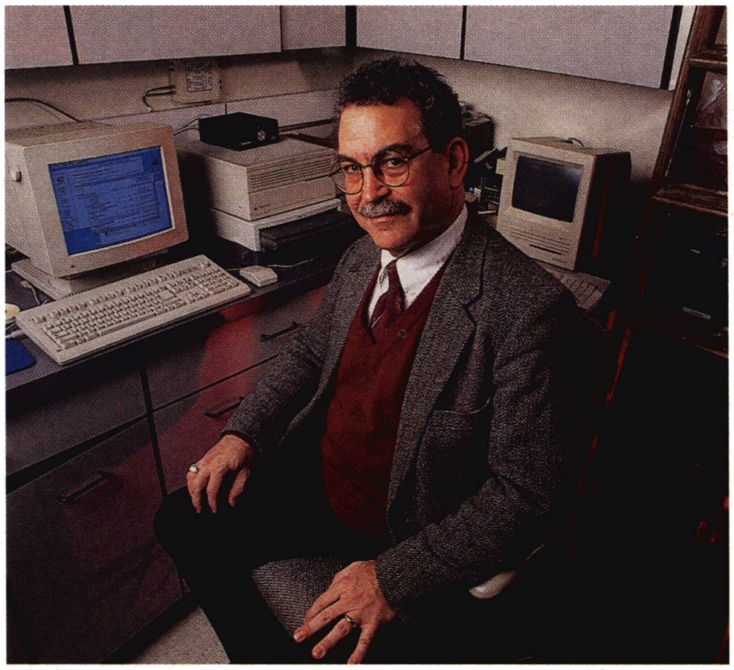
It is applications' driving influence that, more than anything else, will determine how quickly PPCP machines will displace proprietary platforms. Because regardless of size, companies base their desktop and server decisions on the kinds of applications those systems run. That's why, despite administrators' yen for simpler network management, managers do not expect their companies to immediately replace their current Macs and PCs with PPCP computers — at least not without some "killer" application that demands this new platform. Instead, managers said they expect a gradual absorption of PPCP machines into the workplace.

Playing to Copland's strengths

Copland, on the other hand, could find much faster adoption. And why not? With features such as Open Transport, pre-emptive multitasking and protected memory, the next Macintosh operating system promises to be that shining prize: a bulletproof OS.

"My function is supporting users, and I need Copland's reliability," said Jon Hemperley, system manager for the Department of Computer Operations at Boston University.

The problem, Hemperley said, is troubleshooting. Sure, Macs remain easier to set up and configure than their PC counterparts. But try to figure out the source of that latest crash on System 7.5. "With all of those mysterious extensions marching across the screen at start-up, it's hard to tell what each function is and whether it's necessary," Hemperley said. "In the past, I liked the Macs for the way they handled memory, but nowadays you get a lot of crashes and bombs where you just can't figure out what's wrong. I want the simplicity of the old Macs and the new reliability of Copland."



CINDY LOO

Gerald Hornick, director of technical services at the MIT Media Lab, looks forward to ways to make networking more transparent within a multivendor, multi-OS environment.

Other network managers agree. "With System 7.1 and 7.5, there are still a number of crashes caused by conflicts, and that has to change," said Gerald Hornik, director of technical devices at the Massachusetts Institute of Technology Media Laboratory in Cambridge. But that's not the only reason Hornik looks forward to Copland. The other?

"We operate in a multivendor, multi-operating system environment, and anything that will clean up the networking picture will be helpful," Hornik said, with an eye on the new system's Open Transport feature. "When you get into mixed networking, the Mac can be complicated, and we're hoping Copland will make networking a lot more straightforward."

Naturally, there's a catch: Only about 50 of the Media Lab's 250 Apple machines are Power Macs. And only Power Macs will run Copland. "That poses an interesting and difficult decision for us, and it's not unique to Apple," Hornik said. "We had the same problem with Digital [Equipment Corp.], which implemented a new Unix on Alpha but not on the older machines. Now Hewlett-Packard [Co.] is doing the same thing with HP-UX."

The result is rampant fragmentation. "Every time we get into these situations of multiple operating systems, people who haven't been upgraded see new features that they absolutely have to have. But there's no way we can get rid of all but the Power Macs. That puts us in a bind, especially as developers produce new applications for the new operating system: Do we accept reduced productivity as people struggle with different systems, or do we keep everyone on the older systems, despite Copland's benefits?"

So will managers rush to Copland? Sure, once the new system has been thoroughly tested and as long as they have Power Mac-heavy installations. But for those who have built a network of now-aging Macs, the answer is "Nah." Breaking off is just too hard to do.

OpenDoc on the way

Still, there's one new technology that has most Mac managers buzzing. There are no drawbacks that anyone can see, since it's already available on System 7.5. No muss, no fuss — there's just the wait for vendors to deliver products that leverage its features. By this summer, the market should be cooking with OpenDoc.

Promising an end to the bloated software package, OpenDoc lets users create their own program by mixing and matching tools, features and functions from different programs.

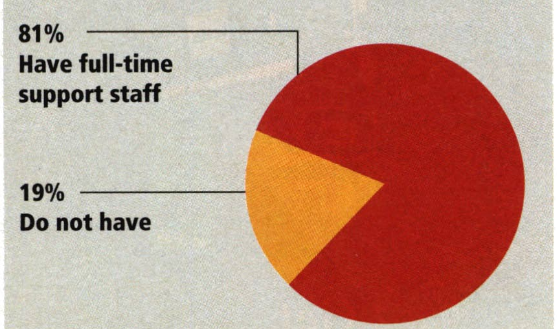
"OpenDoc will advance our way of work, just by allowing us to think about the job at hand rather than how to move that fancy feature from one application to another," said Peter Drain, assistant professor in the department of physiology at the University of Pennsylvania's School of Medicine in Philadelphia. "All it takes is three or four extraneous keystrokes and you've lost your train of thought. But with OpenDoc I can concentrate on what I'm trying to analyze and to convey and not on how to put together the presentation."

Think of it as a productivity issue. At Sir Speedy, for example, Amarillo said he dreams of the day when he can work in QuarkXPress, then grab a drawing tool out of Adobe Illustrator without having to launch it. "Today, Quark tries to add a lot of bells and whistles that are already available in draw packages, and those draw packages do it better," Amarillo said.

Jackson, from the Army Corps of Engineers, couldn't agree more. For him it's a case of necessity. "We don't train here for Macs, instead relying on one user training another," he said. "That's why it's important that whatever programs we get aren't heavy."

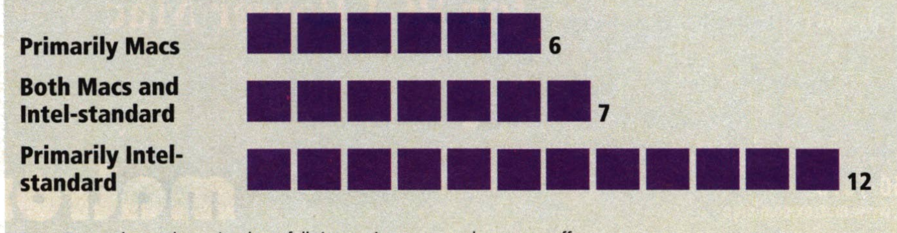
That lightness of being comes in handy for another reason as well: downsizing. "We're constantly being asked to be more productive with fewer resources," Jackson said. "OpenDoc might be the best chance we have to hold our own." □

Percentage of sites with full-time maintenance and support staff



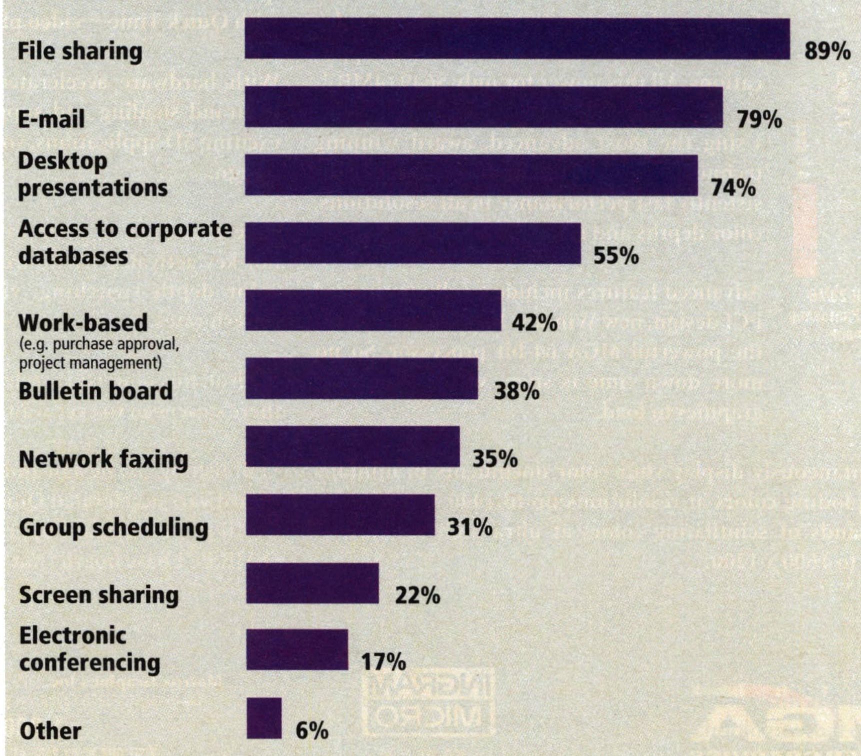
Base: Total respondents.

Average number of full-time maintenance and support staff



Base: Respondents whose sites have full-time maintenance and support staff.

Types of applications used for workgroup computing



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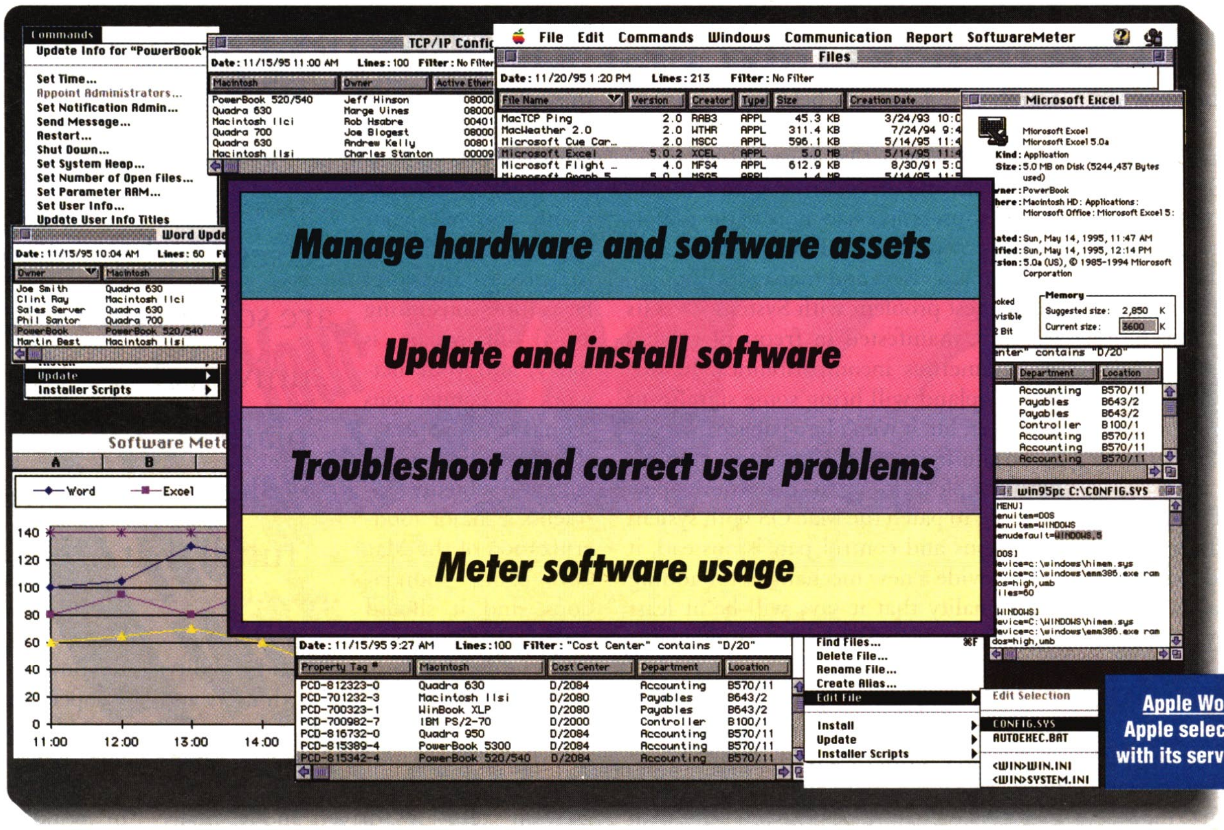
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Technologies

From Page 56

able more promptly to Mac users.

Once it's possible to build a Mac OS-compatible machine without relying on Apple designs, support and custom chips (except the Mac ROM, which Apple promises to make readily available), more vendors are certain to enter the Mac clone market. It's not yet clear whether or when the likes of Compaq Computer Corp., Dell Computer Corp. and Gateway 2000 Inc. will offer PPCP systems, but IBM and Motorola have already committed to do so, and that alone should satisfy corporate IS officials who have dismissed the Mac as a single-source platform. And the new architecture should mean not just more brand names but also a wider variety of designs, configurations and features, since PPCP system makers will enjoy a freedom to innovate that hasn't been available to first-generation Mac cloners.

The aspect of the PPCP plan that has generated some misconceptions is its multi-OS character. Users and managers are so eager for a truly universal hardware platform — one on which they could run any software they wished — that some have jumped to the conclusion that PPCP will fulfill that dream.

Unfortunately, the reality is more complicated. The list of OSes expected to be available for PPCP is long: In addition to the Mac OS, it includes Windows NT, OS/2, AIX, Sun Solaris and Novell NetWare. But Windows 3.1 and Windows 95 won't be ported because they were designed specifically for Intel x86 architecture. Hence, applications written for the Windows-Intel environment will run on PPCP only in emulation; that goes even for programs that run under Windows NT on Intel-based systems, until their developers choose to recompile them for NT on PowerPC. Because Microsoft Corp. has pushed Windows developers to use 32-bit code and support NT on Intel, the number of titles that could be ported with relative ease to NT on PowerPC is increasing rapidly. So far, however, few developers have bothered to recompile their programs for the other RISC processors that NT supports (MIPS Technologies Inc.'s chip and Digital Equipment Corp.'s Alpha). The size of the PPCP market will quickly dwarf the installed base of other RISC systems, so vendors will have a larger incentive, but how quickly they move remains to be seen.

Moreover, switching between operating systems will be more cumbersome than some users seem to realize: Different OSes will have to be stored on different volumes, and switching will require restarting into the new environment. For managers with users who depend on several different OSes, PPCP will bring a welcome flexibility because it will be easy to redeploy the same hardware from, say, an engineering department using AIX or Solaris to a publishing group that demands the Mac OS. But it's not likely that most users will routinely move among multiple systems.

Copland

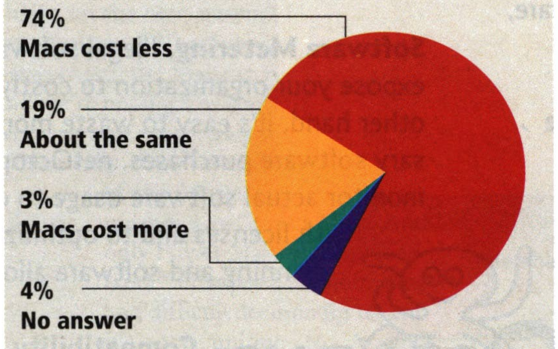
It's even harder to anticipate exactly what the Mac OS' most profound overhaul will ever mean for users, in part because Apple is still debating when the system will ship and what planned features will actually be included. Some things are clear, though: Copland's customizable user interface will give the Mac a bright new look. Such features as drawers, "spring-loaded" folders, redesigned Open and Save dialogs, built-in indexing, and automatically updated search templates will help users manage today's giant hard disks more efficiently. And an all-native OS, in particular a new file system and driver architecture, should give Mac users access to more of the performance potential of the PowerPC.

For many users and managers, though, the biggest problem with System 7.5 is its fragility, manifested in frequent crashes and numerous incompatibilities. In this area Copland will bring some significant advances, but it won't be a panacea.

To eliminate one major source of instability, Apple is closing the doors developers now use to patch the Mac OS with system extensions and control panels; instead, it will provide a new mechanism for adding functionality that it says will be at least equally flexible, yet far more predictable and robust.

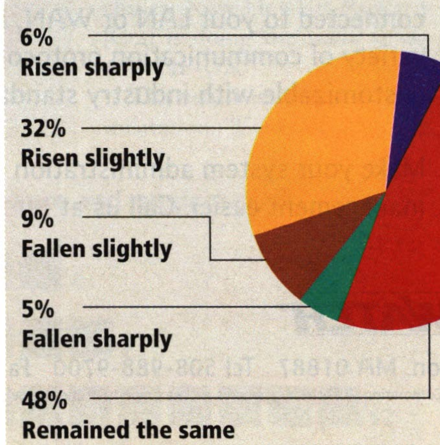
In addition, critical portions of the OS — its new microkernel, file system, I/O subsystem and networking services — will operate in separate protected memory spaces, where they should be immune from problems with errant applications. Copland-savvy applications will also be able to spin off separate tasks — a compute-intensive calculation, for example — to work in their own protected memory spaces.

Cost of supporting and maintaining Macs and their users vs. Intel-standard PCs and their users



Base: Respondents whose sites have Macs and Intel-standard PCs installed.

Change in cost of Mac support in past 12 months



Base: Total respondents.

The limitation to all this is that applications that depend on the Mac Toolbox — essentially all applications with a user interface — will still have to share the same memory space. That means one crashing application will bring down all the others you are running as well as any unsaved work from all of them. To resume work you'll still have to relaunch the Toolbox environment and all your applications, though the process shouldn't be as time-consuming as a full restart is today, and your network connections should remain open.

> Users and managers are so eager for a truly universal hardware platform that some believe PPCP will fulfill that dream.

Bottom line: Copland undoubtedly represents a major modernization of the Mac OS' aging foundations, and it should bring large advances in usefulness, performance and stability. But the "bullet-proof OS" both users and managers long for will likely remain a distant dream. And in the short run, things could get worse before they get better: Current extensions, drivers and (in many cases) applications will cease to work, and managers will be forced to replace them on PowerPC systems even as they continue to support them on 680x0-based Macs stuck at System 7.x.

OpenDoc

Of the three major advances in question, OpenDoc is the closest at hand — Apple has already delivered Version 1.0 to developers — yet its impact on Mac computing is hardest to gauge.

That's largely because it is, in many ways, the most revolutionary of these technologies. To enthusiasts, OpenDoc signals the end of the tyranny of the bloated monoliths, the giant applications that dominate the market today; in its place, they envision a world where users can focus on the tasks at hand instead of the programs installed, summon up simple tools that do exactly what they want — no more, no less — and grab new tools as needed when new tasks and new data types come along.

This vision, however, is fraught with unresolved issues. The first is when and how widely OpenDoc will be supported by key software developers; it's hard to imagine how OpenDoc-based computing will become the norm among Mac users until developers such as Adobe Systems Inc., Claris Corp., Macromedia Inc. and Quark Inc. convert their major applications into OpenDoc containers and part editors. (It's a given that Microsoft won't support the technology, although OpenDoc should interoperate easily with the company's OLE technology.)

Most developers, however, appear to be proceeding slowly with OpenDoc support; at Comdex/Fall '95 in Las Vegas, no major Mac developers had OpenDoc implementations on display. Novell Inc.'s recent decision to abandon its development of OpenDoc for Windows has compounded the problem. IBM now promises to finish the job, but cross-platform developers are especially reluctant to commit to a new paradigm until they are sure it will be available for the largest of today's markets and that it will live up to promises of seamless interoperability with the already-standard OLE.

That's only one of several uncertainties now surrounding OpenDoc. Small developers producing specialized parts play a central role in the OpenDoc vision, but no one knows what business model will prove viable for developers of small components in an industry where marketing costs are soaring and shelf space is at a premium.

There are also doubts as to whether mainstream customers really want to break with the monolithic-application model; the industrywide popularity of application suites seems to suggest that many buyers want fewer, not more choices.

Besides, not everyone is convinced component software will bring the improved productivity proponents promise: The new metaphor might confuse some users ("Where did the Quit command go? How come the menu that was there a minute ago isn't anymore? Why does Command-G sometimes do one thing and sometimes another?"). Managers who find training, version control and system configuration challenging enough when users have only a handful of applications wonder whether shifting to a model that involves dozens of specialized parts will really improve the situation. And then there's everyone's OpenDoc nightmare: Opening up a document at 35,000 feet above Nebraska and discovering that critical sections show up only as gray boxes because you don't have an appropriate part editor or viewer in your parts bin.

At this point OpenDoc's fate — or at least the prospects of its having a major near-term impact — may hinge on Cyberdog, Apple's OpenDoc-based suite of Internet tools. OpenDoc itself, like Copland, was designed before the current explosion of interest in the Internet, and its feature set is not especially Internet-oriented. But Cyberdog, by offering a unique level of flexibility to today's net-surfers, could go a long way toward making the benefits of the component software model more concrete in the eyes of both users and developers. □

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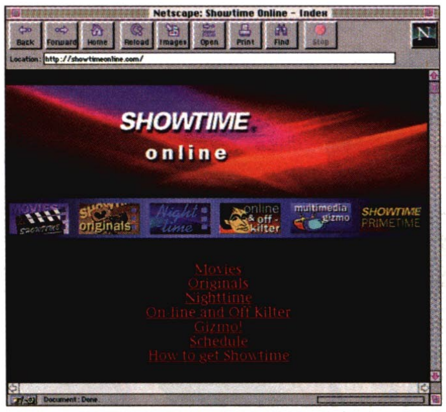
Everybody *really is* surfing the Internet

By Laurie Flynn



Showtime's Web site has information about current and upcoming programming.

JAMIE TANAKA

Bradley Miller says the California Department of Transportation's Web site will assist in giving Californians immediate access to road conditions all over the state.

While making money over the Internet's World-Wide Web remains an elusive proposition for most companies, Macintosh managers are racing to put the medium to use for marketing their companies and services.

Today, more than 92 percent of Mac managers work in organizations that have access to the Internet, and of those, fully two-thirds said they already have a Web site up and running.

Yet as a tool of commerce, the Web still appears to serve more as a medium for enhancing a company's image — a sort of electronic company brochure — than for actually conducting core business functions such as sales. Of those with Web sites 97 percent said they used their Web sites to distribute information; 71 percent said they used them for marketing and advertising. Only one-third of Mac managers with Web sites said they were actually using the Web for sales, and many of those are not yet willing to perform transactions over the Web.

Good business on-line

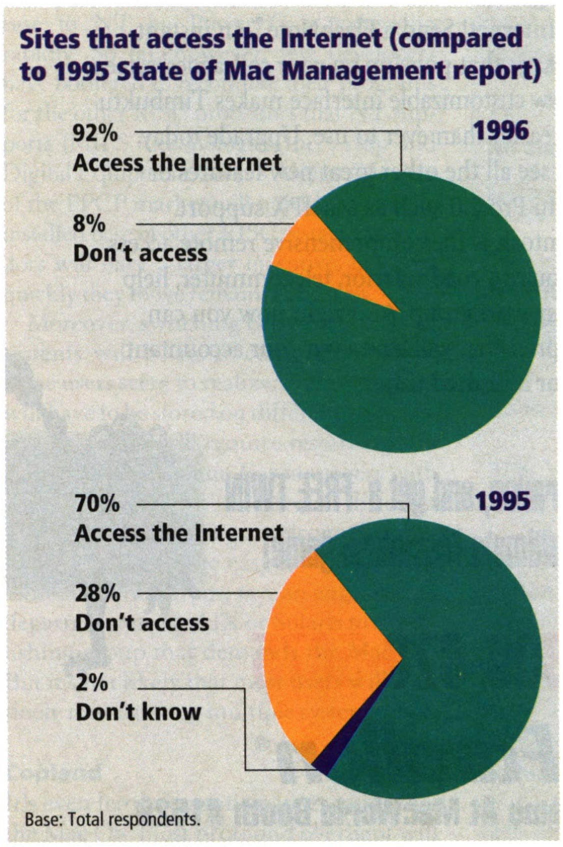
Still, the number of companies selling products and services on the Web is skyrocketing, and so are their sales revenues. ActivMedia Inc., a market research company specializing in on-line commerce, projects that sales generated via the Web will soar from $17.6 million in 1994 to more than $400 million in 1995.

Not surprisingly, high-tech companies are perhaps the most likely to be using the Internet for sales at a time when doing so is still considered a somewhat risky business.

One such group is The Voyager Co., a commercial CD-ROM publisher in New York, which has 63 software titles on the market. Today Voyager sells about $8,000 worth of software weekly through its Web site, which it launched in February 1995 and which now receives about 11,000 visitors a week.

Customers can browse the site, which includes an on-line catalog, and purchase software by entering a credit card number on screen. Eventually, said Trevor Kaufman, Voyager's on-line director, some customers will simply download software directly, rather than have it sent to them. "[The Web] is a substantial part of our direct-mail business," Kaufman said.

Sites that access the Internet (compared to 1995 State of Mac Management report)



Base: Total respondents.

Nevertheless, the company sees only limited actual Web site sales as opposed to sales from direct mail, but the fact that the site is inexpensive to maintain makes it worthwhile, particularly compared with the cost of print catalog sales, Kaufman said. This year Voyager customers will also be able to purchase and download fonts at the site, as well as content not available on disk, somewhat like a limited on-line service. "What is really the future for us is delivering content on the Web and having people pay for it," Kaufman said.

As for the notion that the Internet is still unreliable and vulnerable to hacking, Kaufman said it's nonsense, for the most part. "I've never heard of anybody's credit card number being stolen," he said. "People's reluctance to buying things on the Web tends to dissolve when you offer them what they want at an attractive price."

Still, many companies eager to perform sales transactions over the Web are choosing to wait until the perceived shortcomings in Internet security are addressed, which analysts predict will happen this year. But for many other companies, it may never be feasible to sell their products or services over the Web, though they are interested in using the Web to support their sales efforts.

One such company is Conometric Medical Systems Inc., a seller of large-scale medical equipment in Wallingford, Conn. The company plans to launch a Web site to distribute information about its products and technology, but it has no plans to sell products over the Web, since its sales are typically the result of long-term relationships between Conometric's sales staff and customers. "The company doesn't want to get in the way of the salespeople," said Phuc Hoang, graphic arts supervisor at the company.

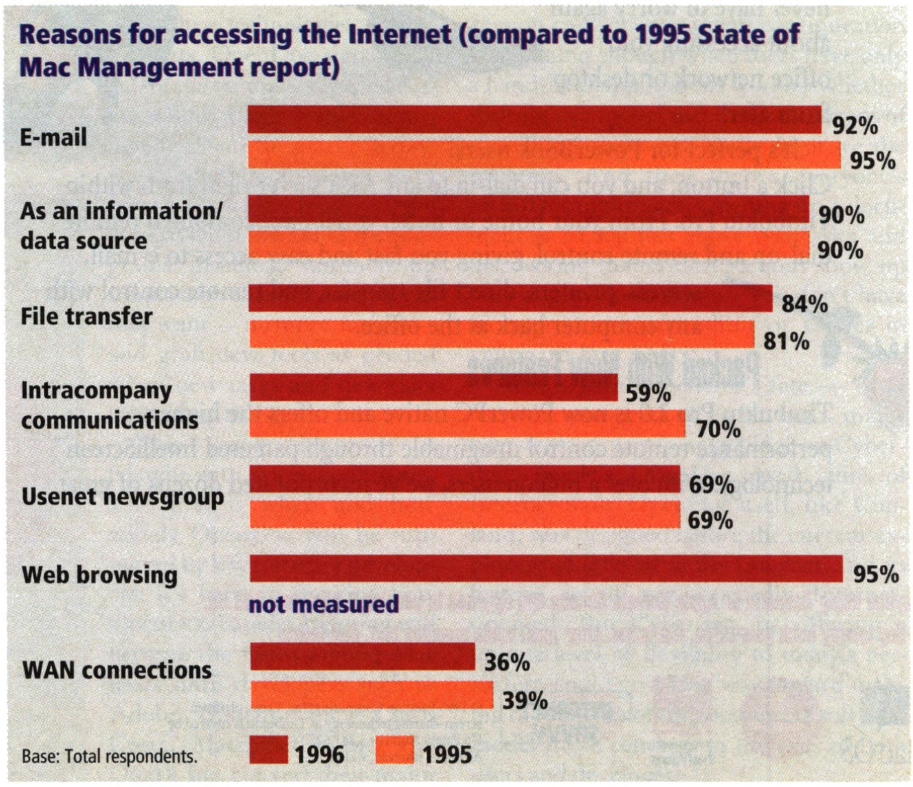
Some organizations have decided that while the medium may not be ready to help them make money, perhaps it can help them save some. Already, the Web is being used to perform critical business functions such as improving service and responsiveness to customers. Of Mac managers with Web sites, 42 percent said they used them for customer support.

How are the roads?

The California Department of Transportation, known as Caltrans, has created a Web site that, among other things, lets people check current road conditions and chain control on mountain roads throughout the state before embarking on a trip. Other links can take people to various offices of the agency's bureaucracy, keeping them from wasting time trying to locate of-

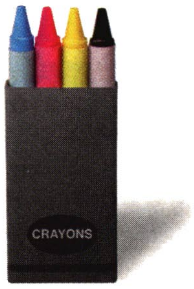
See Internet, Page 64

Reasons for accessing the Internet (compared to 1995 State of Mac Management report)



Base: Total respondents.

Some people scan in RGB



Some people scan in CMYK

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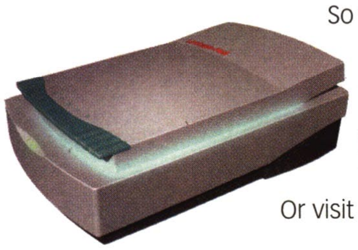

Linotype-Hell

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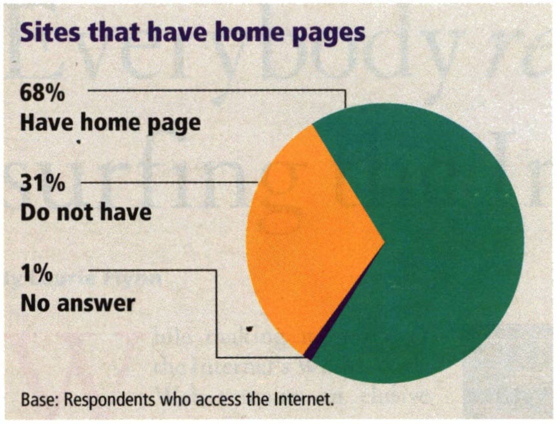


Sites that have home pages

Base: Respondents who access the Internet.

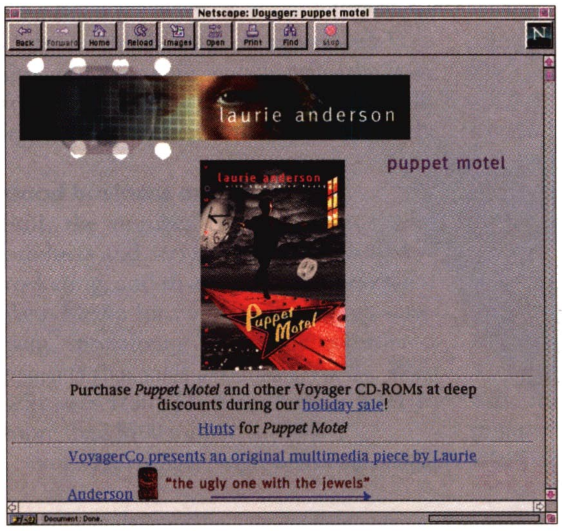
Internet

From Page 62

ficials through a voice-mail system. It's particularly helpful when you're not sure who exactly would have the information you need. "You're never really sure what you're looking for when you call, but a Web site lets you poke around very easily," said Bradley Miller, a Caltrans representative whose office is in Marysville, Calif. The site is managed by Caltrans headquarters in Sacramento and links 12 district offices throughout the state.

Many technology companies, including Apple, are using the Web for support software, publishing technical specifications or pointing customers to other on-line support areas. Voyager, for example, plans to start a frequently-asked-questions section on its site next year. K2 Technologies Inc., a technical software development company in Sandy, Utah, said it plans to bring up a Web site next year to help distribute bug reports and software updates, much like its FTP site does today. Federal Express said it is hoping its site on the Web will help defray some of the cost of customer service, particularly in tracking packages, and so far it appears to be achieving that goal. Already, customers track roughly 100,000 packages per month using the company's Web site, a task usually provided by service representatives at the Federal Express headquarters in Memphis, Tenn.

But clearly the most popular use of a commercial Web site today is simply for distributing information, followed closely by marketing and advertising, and virtually every commercial Web site today performs those functions to some extent. In fact, roughly three-quarters of all commercial Web sites exist for the purpose of enhancing a company's image, according to ActivMedia.



Purchase *Puppet Motel* and other Voyager CD-ROMs at deep discounts during our holiday sale!

Hints for *Puppet Motel*

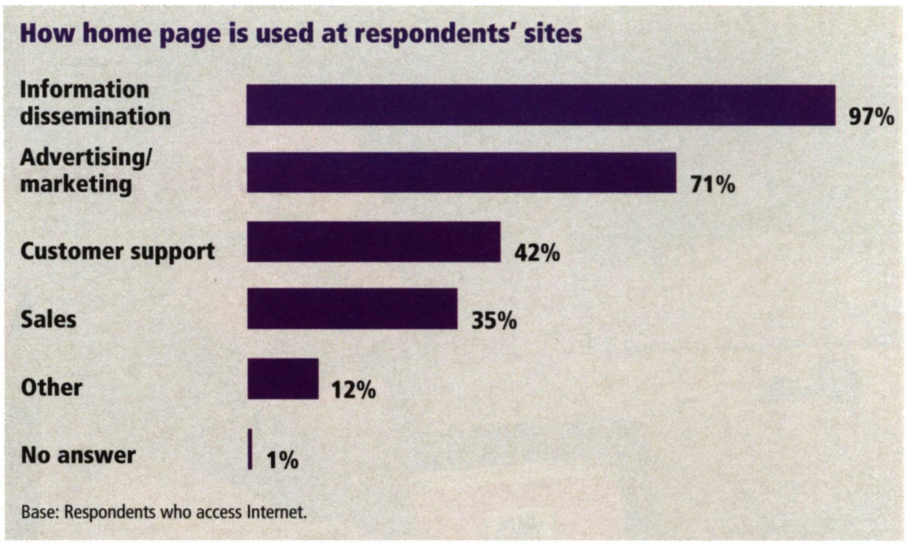
VoyagerCo presents an original multimedia piece by Laurie Anderson "the ugly one with the jewels"

Document: Done.

The Voyager Co. uses its Web site as part of its sales efforts. Shown here is information about one of Voyager's featured artists, Laurie Anderson.

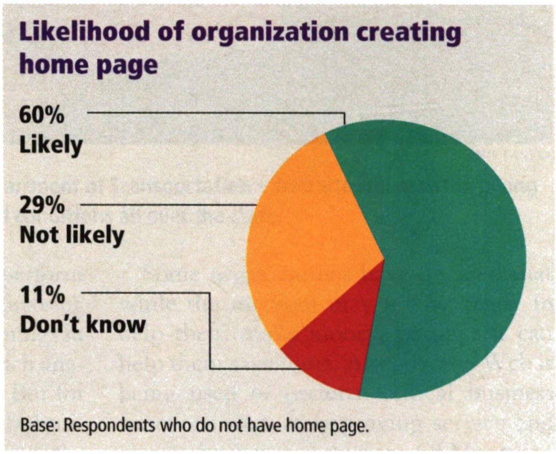
It's Showtime

The Showtime Networks Inc. cable movie channel considers its Web site a forum for enhancing its corporate profile rather than for performing a particular commercial function, said Dirk VanDall, a digital-video specialist with Showtime in New York. So far, it includes an on-line program guide, which may eventually link to actor profiles and movie reviews, as well as to the home pages of MTV, Nickelodeon and other channels also owned by Showtime's parent company, Viacom International Inc.



How home page is used at respondents' sites

Base: Respondents who access Internet.



Likelihood of organization creating home page

Base: Respondents who do not have home page.

The company has no plans to actually sell anything there. "It serves mostly to give people a sense of the content of the channel," VanDall said. "It's just a way of dipping our toes in the water."

Because Showtime has relatively few opportunities to advertise itself — the TV channel doesn't carry any advertising, for example — the Web site offers an opportunity to better establish its brand identity, he said.

Voyager's Web site also serves as much to enhance the company's image and brand appeal as it does to directly sell products, a fact made obvious in the site's design as well as its content. For example, the site's home page includes a link to posters by the Guerrilla Girls, a feminist artist group. Another link takes you to a trendy electronic magazine, the Paris Review. Other organizations use a Web site as a sort of electronic water cooler, a central location for learning the latest company news and exchanging vital data.

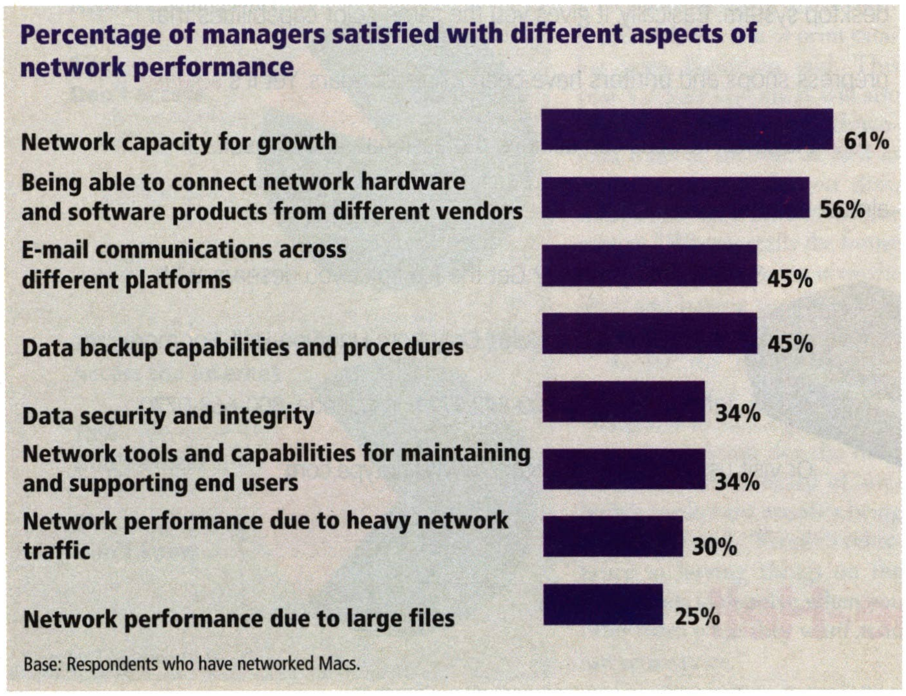
At BDM Federal Inc., a technical services company in Boulder, Colo., for example, the company's Web site is used to post job listings within the company, replacing paper memos. While the site is available outside the company to anyone wanting to learn about the company, by far the most frequent visitors are employees.

Likewise, the graphic design department within Capital Cities/ABC, based in New York, plans a site strictly for enhancing communications within the organization rather than communicating with the public.

Of those Mac managers who said they didn't already have a Web site up, nearly two-thirds said they planned to create one sometime in 1996. Weekly Reader Corp. in Middletown, Conn., for example, said it will launch a Web site to complement the print publications it sends out to 8 million schoolchildren each week.

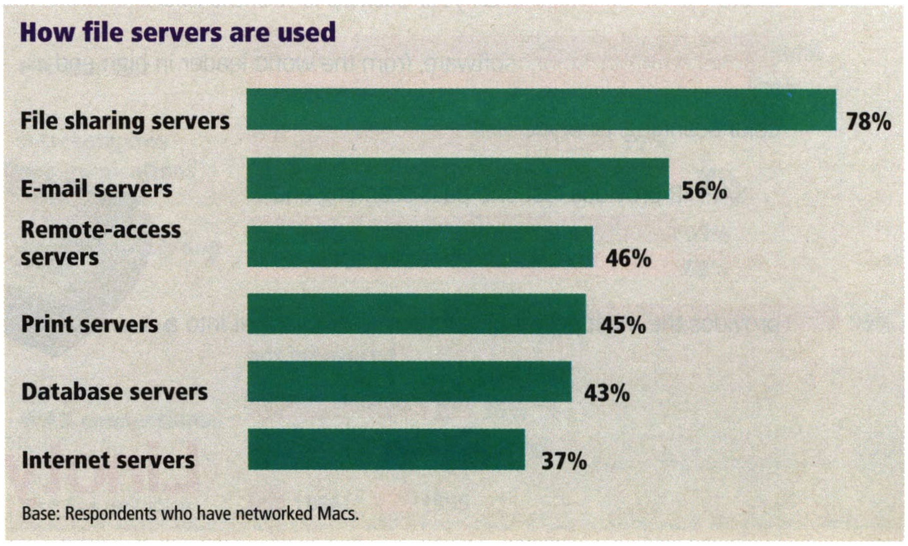
But those companies without a Web site aren't missing out on the rush to the Web entirely. Of those Mac managers who use the Internet, 95 percent said one of the main reasons for using it was to browse the Web.

Nearly the same number said they also used it for exchanging e-mail (92 percent) and for accessing information sources and databases (90 percent). More than two-thirds said they used the Internet for accessing Usenet newsgroups. ☐



Percentage of managers satisfied with different aspects of network performance

Base: Respondents who have networked Macs.



How file servers are used

Base: Respondents who have networked Macs.

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You save a ton of e-mail from all over the place. Problem is, the more you store, the harder it is to remember where you stored it all.

MailKeeper,™ from Nisus® Software, solves the "buried too deep to find it" e-mail dilemma. It's the fastest, most efficient way to store and retrieve information including e-mail, text clippings and electronic addresses.

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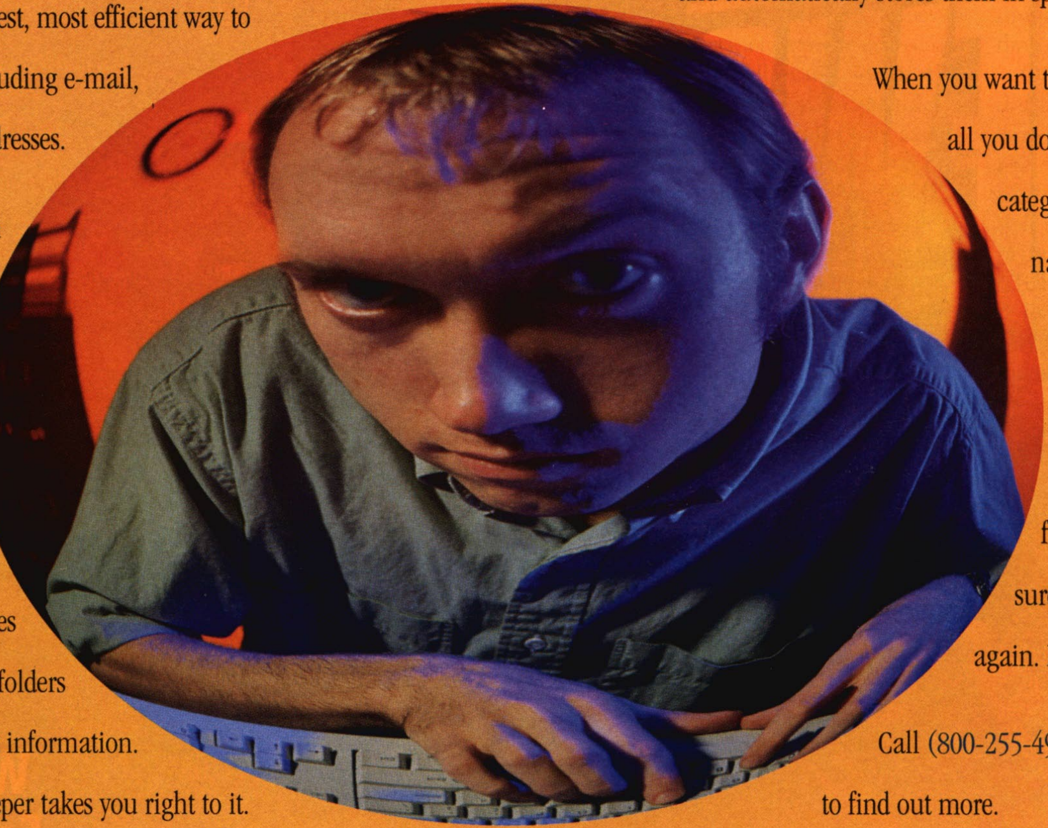
With MailKeeper, you never have to search through multiple Mailboxes or comb through folders within folders within folders to find lost information. MailKeeper takes you right to it.



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MACESSENTIALS

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Your Guide To
Macintosh®-Compatible
Hardware And Software

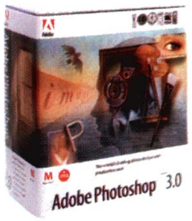
Go Configure — With Radius

Radius has partnered with several manufacturer's to offer you an exciting new program called Go Configure. Through this program, participating resellers can offer you custom-configured systems based around the Radius CPU.

With Go Configure, you have the opportunity to create flexible solutions that will not only meet your needs, but will save you cash because participating manufacturers are offering a large selection of products at special discounts. Go Configure allows your reseller to help you choose from an extensive menu of options, including modems, hard drives, utilities and applications; base the configuration order around a Radius CPU and have it configured for you.

To date, participating manufacturers include Agfa, Allied Telesyn, Casady & Greene, Centon Electronics, Claris, Corel, Fractal Design, FWB, Global Village Communication, HSC Software, Insignia Solutions, Kent Marsh, Macromedia, MicroNet Technology, Newer Technology, Now Software, Software Ventures, Specular International and Strata.

To take advantage of the Go Configure program, contact your Radius-authorized systems reseller.



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Adobe Photoshop 3.0.5
Adobe Photoshop 3.0.5, with new layer support, allows you to experiment with combinations of graphics, text and special effects – without altering the original background image.
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Adobe Premiere 4.2 lets you easily create QuickTime digital movies and videotapes on the desktop. New in version 4.2, the Movie Maker plug-in offers more control over key frames, cropping and filtering.
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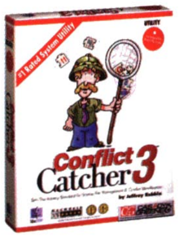
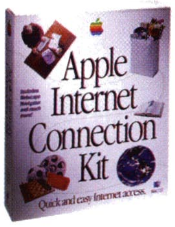
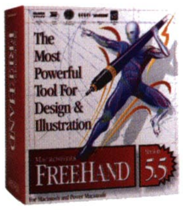


Casady & Greene
Conflict Catcher 3
Conflict Catcher 3 sets the industry standard for startup file management and conflict identification. It pinpoints your Macintosh problems and manages startup files to help you avoid future troubles.
Conflict Catcher 3 Configuration SKU# 179577


Apple Internet Connection Kit
Quick and easy Internet access.

Claris
Apple Internet Connection Kit
Apple Internet Connection Kit offers all the software tools you need for quick, easy and direct access to the Internet.
Apple Internet Connection Kit SKU# 367826



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FreeHand 5.5
FreeHand 5.5 is the most powerful tool for design and illustration, with the fastest and most comprehensive set of drawing tools, open architecture and complete page-layout environment.
FreeHand 5.5 Configuration SKU# 337137

LIVE PICTURE

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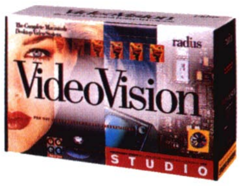
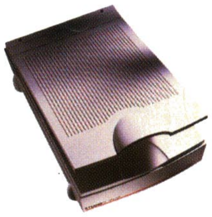
Live Picture
Live Picture is the perfect complement to turn a Radius CPU into a high-powered imaging workstation. Open, crop, rotate, scale and mask three 72-MB high-resolution images in seconds.
Live Picture SKU# 228370

PrecisionView

Radius
PrecisionView 21
For professionals in desktop publishing, graphic design, typesetting, multimedia production and imaging, PrecisionView 21 gives you the quality your work demands.
PrecisionView 21 SKU# 351970



Radius
VideoVision Studio
VideoVision Studio is a professional Macintosh digital video system that records full-screen, full-motion 60 field/sec. digital video input and output. It's QuickTime-compatible, so it works with hundreds of applications.
VideoVision Studio SKU# 229957



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The high speed of StudioScan IIsi significantly increases productivity even in the most demanding environments. And its price/performance ratio makes it the scanner of choice.

StudioScan IIsi SKU# 345809

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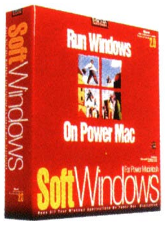
Arcus II SKU# 345811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SoftWindows 2.0 for Power Macintosh

SoftWindows 2.0 for Power Macintosh allows a Power Macintosh to do everything a Windows PC can do, from working on PC networks to running Windows CD-ROMs.

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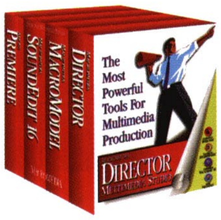
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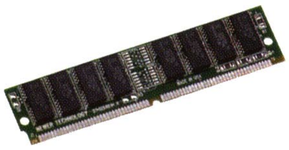

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Newer Technology is a recognized leader in Macintosh memory development. Each SIMM is fully tested, comes with a 30-day money-back guarantee and a lifetime warranty, and is guaranteed to be 100 percent compatible.

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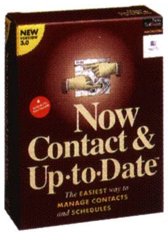
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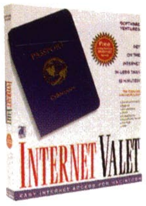
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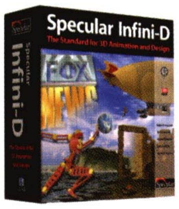
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Alps Desktop GlidePoint for Macintosh is a perfect pointing device for desktop computing. Just glide your finger over the GlidePoint surface to move the cursor. Tap your finger on the surface to select or click on a field. The GlidePoint works on or off its adjustable, weighted base. The software version installs easily and provides an enhanced control panel. You can adjust GlidePoint's sensitivity and acceleration to your individual touch, as well as select from a list of preset shortcuts and hot spots. No other pointing device gives you as many options for producing natural comfort — exactly matched to today's working styles.

Desktop Mac GlidePoint, Featuring "Taps"	SKU# 497001	Call for pricing.
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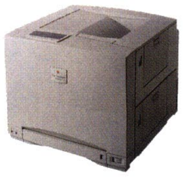

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The Apple Color LaserWriter 12/600 PS printer provides outstanding results for color and black-and-white printing. It's ideal for anyone wanting convenient, superior-quality color printing capabilities at an affordable price.

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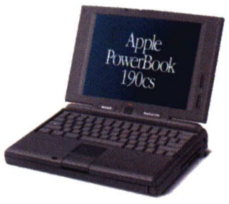

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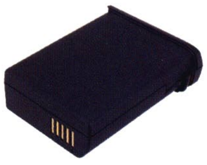

Battery Technology
Replacement NiMH Battery for Omega/M2
Battery Technology's MC-1950 internal battery is a nickel metal hydride (NiMH) cell-type battery designed for the PowerBook 5300 and 190 series. It offers four- to five-hour minimum run times and six hours maximum.

NiMH Internal Battery for PowerBook	SKU# 230766	SRP $219.95
Slimpack External Battery for PowerBook	SKU# 230767	SRP $299.95

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QuikNet Macintosh Connector Kit
The QuikNet Connector Kit allows up to 48 Macintosh computers and printers to network using easy-to-install phone cabling. It allows users to share files and printers over any AppleTalk-compatible network.

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3M's new enhanced-performance, anti-static, 3.5" high-density diskettes protect against static buildup during operation and are climate-adaptive — preventing data loss from temperature and humidity fluctuations.

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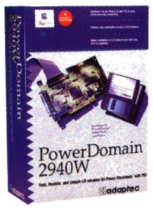
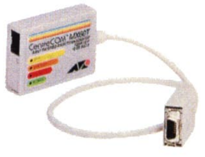
5.25" 1.3-GB Rewritable Optical Disk	SKU# 308846	SRP $161



Adaptec
PowerDomain 2940W Kit

The PowerDomain 2940W Kit, a 16-bit, single-channel PCI-to-SCSI accelerator kit, unleashes the performance available on the PCI bus, while making I/O manageable and conserving precious PCI slots.

AHA-2940W APL Kit	SKU# 269895	SRP $349



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Allied Telesyn Ethernet AAUI transceivers make it easy to connect devices with Ethernet AAUI ports to LANs. Available with 10Base-T, thin-coax and fiber-optic connectors, these transceivers meet all media needs.

AT-MX60T, RJ-45 to AAUI	SKU# 347448	SRP $37.95
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Power Macintosh 7500/100

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Apple Power Macintosh 9500 computers set new standards in speed, performance, expandability and upgradability. With six slots, they're the most customizable and expandable Macintosh computers available.

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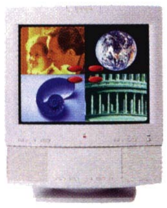

Apple Computer
AppleVision™ 1710AV Display

The AppleVision 1710AV audiovisual display is designed with the mainstream business user in mind, but well-suited to a variety of tasks, including desktop publishing and multimedia work.

AppleVision 1710AV Display	SKU# 475929	Call for pricing.

Workgroup Server 8150/110

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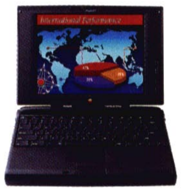
The Workgroup Server 8150/110 delivers file and print, database, Internet and applications server capabilities that meet the needs of medium-size workgroups.

Apple Workgroup Server 8150/110	SKU# 354362	Call for pricing.



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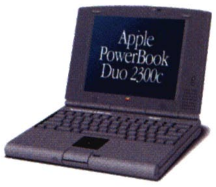
Macintosh PowerBook 5300ce/117

The Macintosh PowerBook 5300ce/117 combines the high performance of PowerPC processor technology and long battery life to bring you the highest-quality, highest-resolution color PowerBook.

Macintosh PowerBook 5300ce/117, 32/1.0 GB	SKU# 475934	Call for pricing.
Macintosh PowerBook 5300c/100, 16/750 MB	SKU# 475933	Call for pricing.



Apple Computer
Macintosh PowerBook Duo® 2300c

The Macintosh PowerBook Duo 2300c is Apple Computer's smallest, lightest PowerBook computer. It provides the performance of the RISC-based PowerPC processor in a sleek, compact system, weighing less than 5 pounds.

Macintosh PowerBook Duo 2300c	Call for SKU#	Call for pricing.

Asanté Technologies
AsantéFast 100 Hub

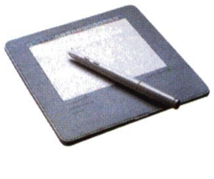
The AsantéFast 100 Hub, a 12-port, stackable 100Base-TX hub, brings Fast Ethernet hub capabilities to departmental networks. And it provides 10 times the performance of other 10Base-T networks.

AsantéFast 100 Hub	SKU# 331731	SRP $1,995

ATI TECHNOLOGIES
XCLAIM GA

The XCLAIM GA true-color graphics accelerator offers blazing speed, color and resolution at a fraction of the cost. You'll be more productive in QuarkXPress, Adobe Illustrator, Adobe PageMaker and other graphics-intensive programs.

XCLAIM GA 2-MB PCI	SKU# 233460	SRP $449
XCLAIM GA 4-MB PCI	SKU# 233461	SRP $649



CalComp
DrawingSlate II

DrawingSlate II has a slim, lightweight, high-accuracy 4" by 5" active area that's ideal as a laptop or desk tablet. And it features a responsive pressure-sensitive pen for a true drawing feel.

DrawingSlate II, Macintosh	SKU# 490451	SRP $150
DrawingSlate II, PC	SKU# 490450	SRP $150

CH Products
FlightStick Pro

FlightStick Pro is the ultimate battle stick for computer pilots. You can activate your radar, arm and disarm weapons and view about your aircraft without removing your hand from the stick. You can program the buttons or use the custom game settings provided for today's popular games.

FlightStick Pro	SKU# 132096	SRP $130

Dataproducts
Typhoon 8

MacUser's Sept. 1995 edition states that the Typhoon 8 laser images are, "stunningly realistic with smooth grayscale ramps, rich blacks and full shadow detail ... truly a feature-rich printer."

Typhoon 8, 4 MB, 600 dpi, LocalTalk	SKU# 371149	SRP $2,699
Typhoon 8, 4 MB, 600 dpi, Ethernet	SKU# 371150	SRP $2,999

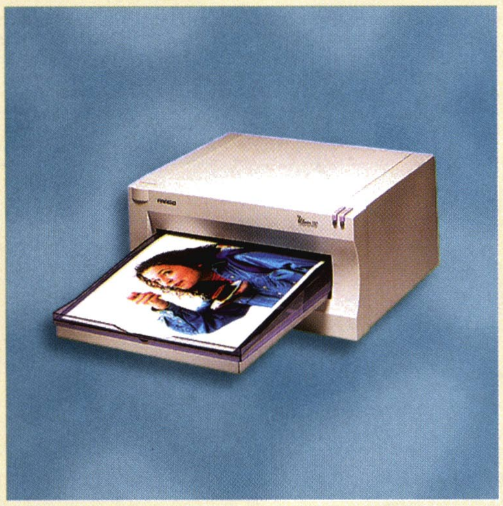
CommuniCard
Ethernet Adapter
Dayna

Dayna Communications
CommuniCard Ethernet Adapter

The Dayna CommuniCard Ethernet Adapter offers quick-and-easy Ethernet network connection for PowerBooks with built-in PC card slots. It supports 10Base-T and thin Ethernet.

CommuniCard Ethernet Adapter, 10Base-T	SKU# 702202	SRP $199
CommuniCard Ethernet Adapter, 10Base-T/Thin	SKU# 702203	SRP $239

FARGO ELECTRONICS
Pictura 310e Color Printer



For spectacular quality at an affordable price, choose FARGO Electronics' Pictura 310e tabloid-size color printer. With wax-thermal transfer and dye-sublimation modes, it provides crisp, 300 x 300-dpi output in stunning 24-bit color. The 310e also includes Adobe PostScript Level 2, dual interface for Macintosh and Windows, FargoColor color matching by Candela and ColorSync 2.0 profiles.

Pictura 310e	SKU# 296763	SRP $5,995
Pictura 310	SKU# 227894	SRP $4,995

DayStar Digital
100-MHz PowerPC Upgrades

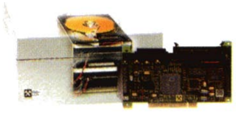
DayStar Digital's 100-MHz PowerPC upgrades offer Power Macintosh performance in an easy-to-install PDS upgrade card. The upgrades are a cost-effective solution to your need for speed.

100-MHz Power Pro 601	SKU# 208283	Call for pricing.
100-MHz Turbo 601 (IIvi, IIvx, Performa 600)	SKU# 208288	Call for pricing.

Diamond Multimedia Systems
Javelin Video Series

Javelin Video 3000 multimedia accelerators for Power Macintosh are the perfect choice for improved graphics and video performance. They offer easy-to-use software for the novice and powerful features for the professional.

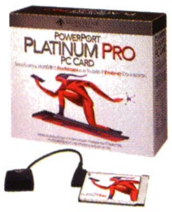
Javelin Video 3240XL	SKU# 355867	SRP $399
Javelin Video 3400XL	SKU# 355868	SRP $569



FWB
SledgeHammer 7000 FMF PCI II

Break through the performance bottleneck with a SledgeHammer for PCI and increase productivity with Photoshop files. SledgeHammer disk arrays deliver everything you need in a high-capacity RAID system.

SledgeHammer 7000 FMF PCI II	SKU# 480810	SRP $9,439



Global Village Communication
PowerPort Platinum Pro PC Card

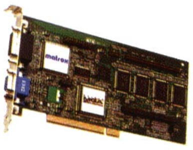
The PowerPort Platinum Pro PC Card is a complete communications solution for PowerBook professionals. It's a 28.8-Kbps fax/modem and 10Base-T Ethernet adapter in one.

PowerPort Platinum 28.8 PC Card	SKU# 137379	SRP $399
PowerPort Gold 14.4 PC Card	SKU# 137378	SRP $209

Kodak
Kodak DC40

The new Kodak Digital Camera 40 offers advantages over instant, still-video and digital cameras in its class: exceptional image quality, large memory and outstanding versatility.

Kodak DC40	SKU# 383413	SRP $995



Matrox Graphics
MGA Millennium

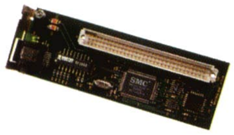
Accelerate publishing, 3-D design and multimedia with the MGA Millennium. It offers the MGA 64-bit graphics processor, dual-port Windows RAM memory and optimized PCI local-bus design.

MGA Millennium, 8 MB	SKU# 255575	SRP $569
MGA Millennium, 4 MB	SKU# 255574	Call for pricing.

Nanao USA
FlexScan T2-17TS/Mac

The new T2-17TS/Mac is a 17" auto-scanning color monitor offering superb performance for Macintosh users with advanced graphics or other critical applications.

FlexScan T2-17TS/Mac	SKU# 378724	SRP $1,149
FlexScan T2-17/Mac	SKU# 378721	SRP $1,380



Newer Technology
EtherTech L10

The EtherTech L10 card makes it easy to connect with high-speed Ethernet 10Base-T networks. It transfers data at the 10-MB Ethernet limit.

EtherTech L10 for PDS Slot	SKU# 347602	SRP $79

EPSON
Hard Disk Card
260MB

Epson America
Hard Disk Card

Available in 170- and 260-MB capacities, the advanced Hard Disk Card is removable, lightweight and comes in a credit card-size metal case. Tested by Apple Computer, it is compatible with any notebook on the market with a PCMCIA Type III slot.

260-MB Hard Disk Card	SKU# 492407	SRP $599
170-MB Hard Disk Card	SKU# 492406	SRP $399

Farallon Computing
EtherMac PowerBook PC Card

EtherMac PowerBook PC cards offer direct 10-MB Ethernet connectivity for Apple Computer's latest PowerBook series. Available in a low-cost 10Base-T version or a flexible BNC/RJ-45 combo model.

EtherMac PowerBook PC Card TP	SKU# 473407	SRP $224
EtherMac PowerBook PC Card, Combo	SKU# 473406	SRP $275

FARGO Electronics
Pictura 310e

Pictura 310e is an affordable, versatile, tabloid-size professional color printer. Its dual-function capability lets you print wax-thermal transfer for fast, economical check-prints and photo-quality dye sublimation for final proofs.

Pictura 310e Color Printer	SKU# 296763	SRP $5,995
Dye-Sublimation Ribbon 4-Color	SKU# 296713	SRP $240
Wax Thermal Ribbon 4-Color	SKU# 296710	SRP $63

FARGO Electronics
PrimeraPro

PrimeraPro is ideal for producing professional-quality materials. It's an advanced, dual-function, dye-sublimation/thermal wax transfer color printer, delivering incredible 600 x 300-dpi, photo-quality output for Macintosh, Windows or Amiga platforms.

PrimeraPro Color Printer	SKU# 227856	SRP $1,895
Photo-Realistic Refill Kit	SKU# 227862	SRP $280
Monochrome Dye Sublimation	SKU# 227852	SRP $162

Hewlett-Packard
HP DeskJet 850C Printer

The HP DeskJet 850C small office printer provides fast printing with speeds up to 6 ppm using black text and 2 ppm using color text. New patented inks provide sharp 600-dpi black print on plain paper.

HP DeskJet 850C Printer	SKU# 397946	SRP $618

Hewlett-Packard
HP LaserJet 5MP Printer

The HP LaserJet 5MP printer offers laser-sharp, 600 x 600-dpi resolution, with 120 levels of grayscale. It features an array of fonts, dual paper trays, 6-ppm print speed and straight-through paper passage.

HP LaserJet 5MP Printer	SKU# 282258	SRP $1,299

Hewlett-Packard
HP ScanJet 4c Scanner

Hewlett-Packard's ScanJet 4c Scanner makes it easy to get high-quality images and text into your office communications in a single, time-saving exposure. Its user-friendly software lets you start scanning in minutes, right from your application.

HP ScanJet 4c Scanner	SKU# 282469	SRP $1,179

Key Tronic
MacPro Plus

The MacPro Plus keyboard offers the convenience of an extended keyboard with the benefit of larger backspace and return keys. It features high-performance switches and molded key caps.

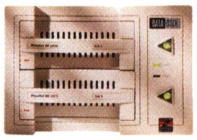
MacPro Plus	SKU# 235518	SRP $99

CruiseCard
28.8
Megahertz

Megahertz
CruiseCard

The CruiseCard, a 28.8-Kbps PC card, allows you to communicate from your PowerBook. Features high-voltage phone line protection, automatic error correction and Flash ROM.

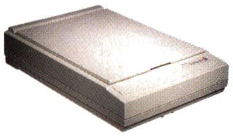
CruiseCard, 28.8-Kbps Modem w/XJACK	SKU# 333561	SRP $349
CruiseCard, 14.4-Kbps Modem w/XJACK	SKU# 333562	SRP $249



MicroNet Technology
DataDock

MicroNet's new DataDock features a 2-bay dock in which you can add hard drive, optical, tape and SyQuest modules. Mix and match to create your own array with this powerful tool.

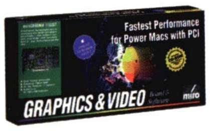
DataDock	SKU# 316179	SRP $699



Microtek Lab
ScanMaker IIHR

ScanMaker IIHR offers high resolution and performance, bundled with the perfect software. This 24-bit, color flatbed scanner has a 600 x 1,200-dpi optical resolution.

ScanMaker IIHR, Deluxe Macintosh Bundle	SKU# 367900	SRP $799
ScanMaker IIHR, Standard Macintosh Bundle	SKU# 367908	SRP $599



miro Computer Products
miroCHROMA 1152

miroCHROMA 1152 PCI-based boards offer hardware-based QuickDraw graphics acceleration for multimedia applications. They feature sensational video acceleration and high-screen refresh frequencies.

miroCHROMA 1152	SKU# 397334	SRP $569
miroCHROMA DC20 (PC)	Call for SKU#	SRP $1,199

Nikon Electronic Imaging
ScanTouch

ScanTouch offers superior optics and a super-fast scanning engine that yields the best image quality and speed of any flatbed scanner in the 600-dpi class.

ScanTouch	SKU# 263714	SRP $1,720

IMAGINE 128

Number Nine Visual Technology
Imagine 128 for Macintosh

For power users demanding the best performance from their Macintosh with PCI, Imagine 128, the only true 128-bit graphics accelerator, delivers in all color modes.

Imagine 128, Macintosh, 4-MB VRAM	SKU# 483312	SRP $899
Imagine 128, Macintosh, 8-MB VRAM	SKU# 483313	SRP $1,499

Olympus Image Systems
Deltis CD-R2

The Deltis CD-R2 is a double-speed, multisession CD recorder/player. It's a complete solution for archiving information, as well as mastering audio, multimedia and other CD formats.

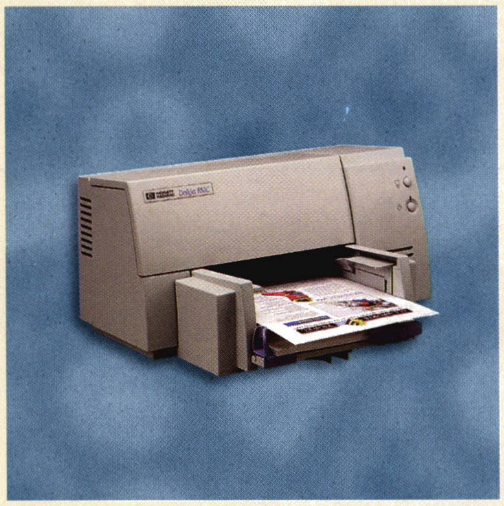
CD-R2/MAC Double-Speed CD-Rec./Player	SKU# 387619	Call for pricing.

Polaroid
Circular Polarizer Computer Filters

Polaroid Circular Polarizer Computer Filters (CP Filters) suppress up to 99 percent of reflected light and improve contrast, resulting in clearer vision.

CP-60 Tricetate Filter, 13"-15" Monitors	SKU# 285831	SRP $45
CP-80 Glass Filter, 13"-15" Monitors	SKU# 285875	SRP $90

HEWLETT-PACKARD
DeskJet 850C Printer



The Hewlett-Packard DeskJet 850C printer, for the small office, provides fast printing with speeds up to 6 ppm using black text and 2 ppm using color text. Its print quality advantage comes from new patented inks for sharp, deep, 600-dpi black print on plain paper. Its exclusive Color Resolution Enhancement technology (C-REt) provides rich, dazzling colors and Color Smart eliminates the guesswork for vibrant color at the touch of a button, and PrintSmart allows for simple, complete Windows printing. The DeskJet 850C printer works with PC or Macintosh systems.

DeskJet 850C Printer	SKU# 397946	SRP $618

Portrait Display Labs
Pivot 1700

Portrait Display Labs' all-new, 17" color pivot monitors are unmatched by conventional monitors. They offer portrait and landscape views in a single display, and are Macintosh- and PC-compatible.

Pivot 1700 w/.26-mm Dot Pitch	SKU# 339609	SRP $1,099
Pivot 1700 w/.28-mm Dot Pitch	SKU# 339607	SRP $999

Prometheus Products
CyberPhone M288evsp

CyberPhone M288evsp, a world-class telephony-enhanced modem, includes a full-duplex speakerphone, voice mail, fax and easy on-line access all on one phone line.

CyberPhone M288evsp	SKU# 482902	SRP $259
CyberPort Pro M288ev	SKU# 482901	SRP $229

Seagate Technology
Macintosh-Compatible Hard Drives

From 1,080-MB, slim-line products for desktop Macintosh to 9-GB disk drives for high-end video editing, Seagate's hard drives provide the ideal capacity, form-factor and performance solution.

ST31230N — 1.0-GB Fast SCSI	SKU# 127919	Call for pricing.
ST32430N — 2.0-GB Fast SCSI	SKU# 127921	Call for pricing.

Sonic Systems
microPrint

The microPrint series of pocket-size LocalTalk-to-EtherTalk bridges connect LocalTalk devices to an EtherTalk network, allowing Ethernet users to print to LocalTalk printers.

microPrint/2	SKU# 230661	SRP $299
microPrint/12	SKU# 230662	SRP $399

TView (formerly Consumer Technology)
Presenter TView

The Presenter TView is one of the industry's highest quality plug-and-play, computer-to-TV adapters. Includes Video Stabilizer, Clear Image and supports 16.7 million colors and resolutions up to 800 x 600 dpi.

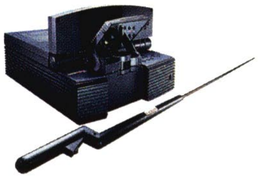
Presenter TView	SKU# 460607	SRP $449

U.S. Robotics
Sportster 14.4 External Fax/Modem for Macintosh

The Sportster 14.4 Fax/Modem sends and receives Group III faxes at 14.4 Kbps and converts received faxes to Macintosh graphics formats.

Sportster 14.4 External Fax/Modem	SKU# 388979	SRP $159

SOFTWARE ▶



Proxima
Desktop Projector 2810

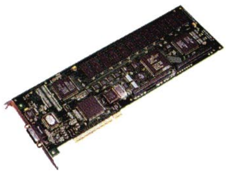
Project live presentations directly from your Macintosh using a Desktop Projector 2810. It offers the ultimate multimedia presentation in a convenient, integrated design.

Desktop Projector 2810	SKU# 134145	SRP $7,495

Radius
MultiView 21

For color presentations, spreadsheets and page layouts, you'll get more done with the MultiView 21 display. It offers high-quality color, sharp graphics and text, plus resolutions up to 1,600 x 1,200.

MultiView 21	SKU# 351971	SRP $2,149
PrecisionView 21	SKU# 351970	SRP $2,749



Radius
ThunderColor 30 Family Graphics Cards

ThunderColor 30 family graphics cards offer unbeatable throughput and accuracy for image processing. They offer more workspace, detail, colors and speed.

ThunderColor 30/1600	SKU# 351959	SRP $2,499
ThunderColor 30/1152	SKU# 351960	SRP $1,999

Radius
VideoVision Studio 2.0

VideoVision Studio offers JPEG hardware compression and decompression for full-screen, full-motion video recording and playback from a hard disk.

VideoVision Studio 2.0	SKU# 229957	SRP $4,849
VideoVision Studio 2.0 Upgrade	SKU# 229961	SRP $2,299

Sonic Systems
QuickStream/3

QuickStream/3 remote-access servers support three simultaneous remote PPP connections at speeds up to 115.2 Kbps. They allow Macintosh, Windows, OS/2 and UNIX users to connect remotely.

QuickStream/3 (110V)	SKU# 230687	SRP $999
Dial-Out Upgrade for QuickStream/3	SKU# 230698	SRP $249

TDK Systems
DF2814AP V.34 Data/Fax Modem Card

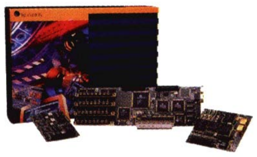
The DF2814AP V.34 data/fax modem card offers high-speed PCMCIA with internal DAA phone line interface. It supports V.34, 28.8-Kbps data and 14.4-Kbps send-and-receive fax.

DF2814AP V.34 Data/Fax Modem Card	SKU# 400001	SRP $379

Texas Instruments
microLaser PowerPro/12

The new 12-ppm microLaser Pro/12 races through complex print jobs with a 3-MB memory and super-charged controller. Includes PostScript Level 2 and PCL5e emulation.

microLaser PowerPro/12	SKU# 702632	SRP $1,599



Truevision
TARGA 2000

TARGA 2000 delivers the total solution for high-quality video and audio authoring on NuBus and PCI Macintosh computers. It captures full-screen video with 60 fields and 30 frames/sec.

TARGA 2000N, NuBus	SKU# 281724	SRP $5,495
TARGA 2000, PCI, Macintosh	SKU# 281726	SRP $5,795

U.S. Robotics
Sportster V.34 28.8 External Fax/Modem for Macintosh

The Sportster V.34 28.8 Fax/Modem sends and receives Group III faxes at 28.8 Kbps and converts received faxes to Macintosh graphics.

Sportster V.34 28.8 External Fax/Modem	SKU# 719100	SRP $279

UMAX Technologies
Vista-S8 MacPro 2

The Vista-S8 is an affordable, high-resolution scanning solution for desktop publishing, graphic design and OCR applications. It maximizes the original image at lightning speed.

Vista-S8 MacPro 2	SKU# 468319	SRP $845
Vista-S8 MacLE2	SKU# 468317	SRP $745

Verbatim
Rewritable Optical Disk with Stacker Software

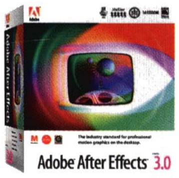
Verbatim 3.5" Rewritable Optical Disks are ideal for graphics, desktop publishing, multimedia and information archival or transport. They feature 100-percent error-free certification and a lifetime warranty.

3.5" 230-MB R O Disk w/Stacker Software	SKU# 216368	SRP $85
3.5" 128-MB R O Disk w/Dantz Software	SKU# 216374	SRP $150

Visioneer
PaperPort Vx

The PaperPort Vx scanner features up to 256 shades of gray and 400 dpi. Drag and drop documents, enhance post scan images, reverse black-and-white or gray-shade images and straighten an item originally scanned at an angle.

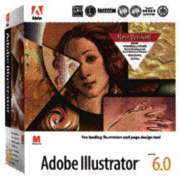
PaperPort Vx	SKU# 306116	SRP $369



Adobe Systems
Adobe After Effects 3.0

Adobe After Effects 3.0 is a digital post-production software application for film, broadcast video and multimedia production. When used with Adobe Premiere, it forms a professional, integrated post-production suite.

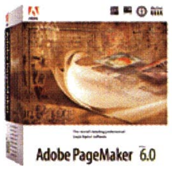
Adobe After Effects 3.0	SKU# 703201	SRP $995



Adobe Systems
Adobe Illustrator 6.0

Adobe Illustrator 6.0 combines the finest illustration tools, image-handling capabilities and typographic features to give you the ultimate power to create. Import TIFF files, use Adobe Photoshop-compatible plug-in filters and even rasterize artwork, all within Adobe Illustrator.

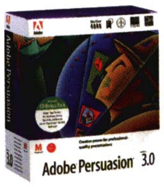
Adobe Illustrator 6.0	Call for SKU#	SRP $595



Adobe Systems
Adobe PageMaker 6.0

Expand your publishing capabilities with Adobe PageMaker 6.0 — the world's leading professional page-layout software. Its powerful new features help you produce outstanding print and electronic communications.

Adobe PageMaker 6.0, Single-User	SKU# 334259	SRP $895
Adobe PageMaker 6.0, Single-User License	SKU# 334261	SRP $716



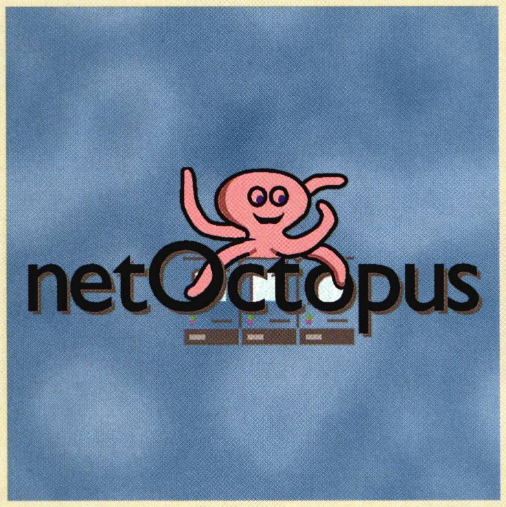
Adobe Systems
Adobe Persuasion 3.0

From original concept to final delivery, Adobe Persuasion 3.0 provides the most powerful formatting, charting and multimedia tools available to transform information into compelling presentations.

Adobe Persuasion 3.0, Single-User	SKU# 334241	SRP $395
Adobe Persuasion 3.0, Single-User License	SKU# 334243	SRP $315

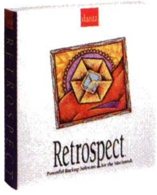
DATAWATCH

netOctopus



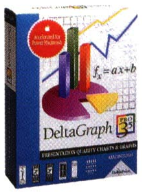
netOctopus by Datawatch is a comprehensive network and system administration solution that allows network and computer administrators to supervise, manage and update an entire network of Macintosh and PC computers — right from their desktops. More than 100 information items make it easy to track hardware and software inventories; install and update software remotely; trouble-shoot, correct and prevent system problems; and monitor software usage. netOctopus saves time for administrators with any-size network because they can supervise, manage and update networked systems right from their own Macintosh. There's no more going from machine to machine because it's all at their fingertips!

netOctopus	Call for SKU#	Call for pricing.



Dantz Development
Retrospect 3.0
Retrospect 3.0 protects computer files from hard disk crashes, fire, theft and other unforeseen disasters. Retrospect's EasyScript makes it easy to automate every aspect of backup.

Retrospect 3.0	SKU# 159800	SRP $249
Retrospect Remote 3.0	SKU# 159801	SRP $449



Delta Point
DeltaGraph Pro 3.5
DeltaGraph Pro 3.5 is a high-performance charting and graphing program. From pictograph, histogram and 3-D charts, to bubble, XYZ contour and scatter plots, it offers an extensive gallery of more than 60 distinct business, scientific and technical charts.

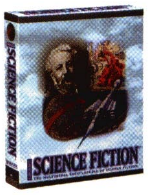
DeltaGraph Pro 3.5	SKU# 152228	SRP $195
DeltaGraph Pro 3.5 Comp. Upgrade	SKU# 152230	SRP $79

FWB
RAID ToolKit Array Software
RAID ToolKit transforms ordinary drives into sizzling, high-performance disk arrays. Get the ultimate in RAID performance and capitalize on MatrixRAID technology.

RAID ToolKit Array	SKU# 232171	SRP $399
RAID ToolKit • JackHammer	SKU# 232172	SRP $679

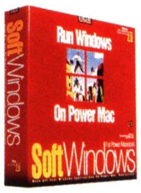
GDT
PowerPrint 3.0
PowerPrint 3.0 lets Macintosh users access more than 1,000 PC-compatible printers. It features a built-in spooler, 32-bit color and grayscale capability, custom paper sizes, reduction and enlargement, print preview and more.

PowerPrint 3.0	SKU# 145738	SRP $149



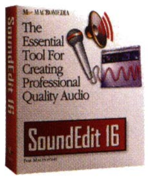
Grolier Electronic Publishing
The Grolier Encyclopedia of Science Fiction
The Grolier Encyclopedia of Science Fiction, a multimedia-packed CD-ROM, integrates hundreds of photographs, illustrations and movie clips with an in-depth 1.2 million-word text.

The Encyclopedia Of Science Fiction, Win	SKU# 190737	Call for pricing.
The Encyclopedia Of Science Fiction, Mac	SKU# 190738	Call for pricing.



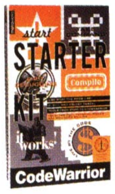
Insignia Solutions
SoftWindows 2.0 for Power Macintosh
SoftWindows 2.0 for Power Macintosh allows a Power Macintosh to do everything a Windows PC can do, from working on PC networks to running Windows CD-ROMs.

SoftWindows 2.0 for Power Macintosh	SKU# 328525	SRP $499
SoftWindows 1.0 for Performa	SKU# 328503	SRP $399



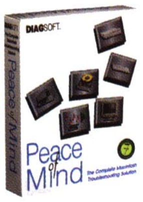
Macromedia
SoundEdit 16
SoundEdit 16 is an essential tool for creating professional-quality audio. Create, edit and add special effects to 16-bit, 44-KHz sounds.

SoundEdit 16	SKU# 243325	SRP $379



Metrowerks
CodeWarrior Programming Starter Kit
The CodeWarrior Programming Starter Kit helps you develop Macintosh software. Designed for novice and experienced programmers, it contains CodeWarrior for 68 KB and on-line documentation.

CodeWarrior Programming Starter Kit	SKU# 399722	SRP $79



DiagSoft
Peace of Mind 3.0

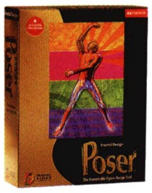
Peace of Mind 3.0 keeps you up-to-date through its on-screen status window and database-style reporting. Features performance benchmarks, diagnostic testing and on-line technical support.

Peace of Mind 3.0 SKU# 123230 SRP $99.95

Fractal Design
Painter 4

Fractal Design Painter 4 brings advanced natural-media painting and drawing tools together with Shapes for a revolutionary multiple-layer graphics environment.

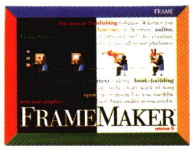
Fractal Design Painter 4 SKU# 171646 SRP $549



Fractal Design
Poser

Fractal Design Poser, the extraordinary 3-D art-creation tool, introduces the art of figure design to the electronic studio. Create, pose and view human models from any direction.

Fractal Design Poser SKU# 171641 SRP $199



Frame Technology
FrameMaker Release 5

Create professional-quality materials easily and efficiently with FrameMaker 5. Its productivity-boosting features let you work on word processing, graphics, design, layout and document distribution.

FrameMaker Release 5 SKU# 367408 SRP $895
FrameMaker Release 5
Upgrade SKU# 367412 SRP $225

GDT
StyleScript Bundle 2.0

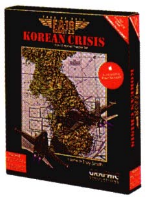
StyleScript Bundle 2.0 provides Adobe Level 2 PostScript for the Apple Color StyleWriter Pro and 2400 ink-jet printers. It's great for the graphics user wanting an inexpensive, yet accurate, proofing solution.

StyleScript Bundle 2.0 SKU# 145740 SRP $149

Graphic Simulations
F/A-18 Hornet 2.0

F/A-18 Hornet 2.0 straps you in for the ride of your life. This simulation uses cutting-edge technology and high-speed graphics to bring you the ultimate adventure.

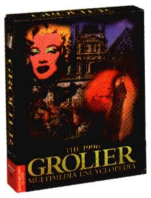
F/A-18 Hornet 2.0 SKU# 248707 SRP $80



Graphic Simulations
Korean Crisis

In Korean Crisis, you'll board a strike fighter for 28 missions in an action-packed world. View airplanes, carriers, air bases and enemy targets in exceptional detail and uncompromising realism.

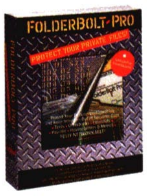
Korean Crisis SKU# 248705 Call for pricing.



Grolier Electronic Publishing
The 1996 Grolier Encyclopedia

The 1996 Grolier Multimedia Encyclopedia is an interesting, informative and accessible multimedia encyclopedia. A redesigned interface and one-click access to on-line information takes learning to a new level.

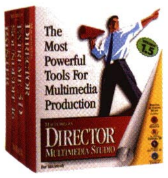
The 1996 Grolier
Multimedia Encyclopedia SKU# 190729 SRP $60



Kent Marsh
FolderBolt Pro

FolderBolt Pro is the standard in security software for the Macintosh desktop and Network. It allows you to create four types of secure folders and even lock the running System Folder.

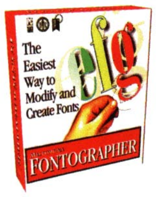
FolderBolt Pro SKU# 230328 SRP $159



Macromedia
Director Multimedia Studio

Director Multimedia Studio includes four all-star packages for a complete multimedia solution: Director authoring, Adobe Premiere digital video editing, MacroModel 3-D modeling and SoundEdit 16 sound editing.

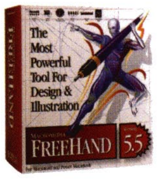
Director Multimedia Studio,
CD-ROM SKU# 337126 SRP $1,999



Macromedia
Fontographer 4.1

Fontographer 4.1 is designed for graphic artists, type designers and technical professionals wanting to modify existing fonts or create new fonts from scratch.

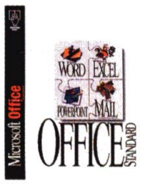
Fontographer 4.1,
Power Macintosh SKU# 104343 SRP $499



Macromedia
FreeHand 5.5

FreeHand 5.5, a powerful design and illustration tool, offers the fastest and most comprehensive illustration tool set. Its unique open-architecture gives you access to a broad range of third-party extras.

FreeHand 5.5, CD-ROM SKU# 337131 SRP $599



Microsoft
Microsoft Office for Macintosh 4.21

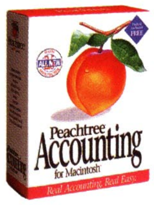
Microsoft Office 4.21 is a collection of full-featured products working together as one program. It offers ease of use, integration, custom solutions and compatibility with Office family programs for Windows.

Microsoft Office
for Macintosh 4.21 SKU# 349797 Call for pricing.

Pantone
PANTONE ColorDrive

PANTONE ColorDrive is perfect for graphic designers and desktop publishers working in color. It allows you to create color palettes and calibrate them for optimal reproduction.

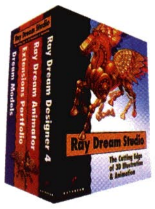
PANTONE ColorDrive 1.5 SKU# 472903 SRP $199
PANTONE Color
Survival Kit SKU# 472908 SRP $185



Peachtree Software
Peachtree Accounting 2.5 for Macintosh

Peachtree Accounting 2.5 offers everything necessary to automate and analyze accounting. It includes on-screen forms such as checks and invoices, as well as payroll.

Peachtree Accounting 2.5 SKU# 293091 SRP $99



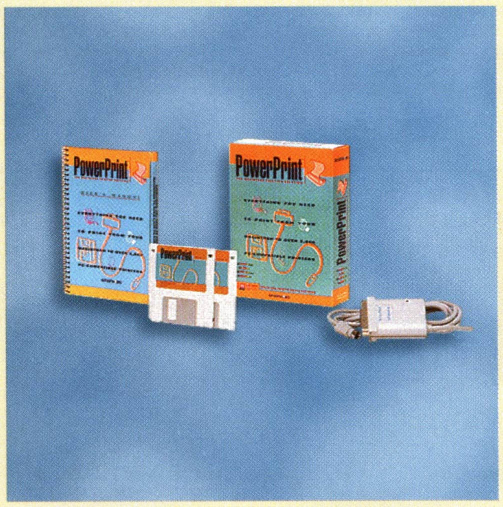
Ray Dream
Ray Dream Studio

Ray Dream Studio is great for experienced multimedia authors or beginners making their first animation. Includes more than 50 new features in four integrated components.

Ray Dream Studio,
Macintosh/Power Mac SKU# 148741 SRP $499

GDT SOFTWORKS

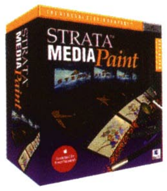
PowerPrint 3.0



PowerPrint from GDT Softworks enables any Macintosh to use more than 1,000 different PC-compatible dot-matrix, ink-jet or laser printers, including the HP LaserJet 5L.

PowerPrint is accelerated for Power Macintosh and features a built-in spooler, 32-bit color and grayscale support with scatter dither, custom paper sizes, reduction and enlargement, print preview and more. Features such as multiple bins, duplex printing, color and internal fonts are also supported for most printers. It comes with a high-speed, serial-to-parallel converter cable. A network version is also available: PowerPrint/LT for LocalTalk and Novell NetWare networks.

PowerPrint 3.0	SKU# 145738	SRP $149
PowerPrint/LT 2.5	SKU# 145701	SRP $299
AutoSwitch	SKU# 145734	SRP $59
PowerPlot 1.0	SKU# 145700	SRP $599
StyleScript 2.0	SKU# 145739	SRP $149
StyleScript Bundle 2.0	SKU# 145740	SRP $149



Strata
Media Paint 1.0
Media Paint 1.0, the first true desktop video paint box, allows QuickTime users to create special movie effects affordably. Add enhancements to QuickTime movies without altering the original.

Media Paint 1.0	SKU# 108234	SRP $695

Strata
Strata StudioPro 1.75
Strata StudioPro 1.75 is perfect for design, animation and multimedia professionals. It offers an integrated 3-D environment, including spline-based modeling and RayPainter rendering.

Strata StudioPro 1.75	SKU# 108239	SRP $1,495

HARDWARE

3M Data Storage Products
3.5" DSHD 1.4-MB Formatted Diskette
5.25" 1.3-GB Macintosh-Rewritable Diskette

Adaptec
PowerDomain 2940W Kit

AGFA
StudioScan IIsi
Arcus II

Allied Telesyn
Ethernet AAUI Transceivers

Alps
Desktop GlidePoint

Apple Computer
Apple Color LaserWriter 12/600 PS Printer
Apple Color StyleWriter 2200
Apple Color StyleWriter 2400
Apple Macintosh Performa 6300CD
Apple Power Macintosh 7500/100
Apple Power Macintosh 9500/132
AppleVision 1710AV Display
Apple Workgroup Server 8150/110
Macintosh PowerBook 190cs/66
Macintosh PowerBook 5300ce/117
Macintosh PowerBook Duo 2300c

Asanté Technologies
AsantéFast 100 Hub

ATI TECHNOLOGIES
XCLAIM GA

Battery Technology
MC-1950 NiMH Battery

Belkin Components
QuikNet Macintosh Connector Kit

CalComp
DrawingSlate II

CH Products
FlightStick Pro

Dataproducts
Typhoon 8

Datawatch
netOctopus

Dayna Communications
CommuniCard Ethernet Adapter

DayStar Digital
100-MHz PowerPC Upgrades

Diamond Multimedia Systems
Javelin Video Series

Epson America
Hard Disk Card

Farallon Computing
EtherMac PowerBook PC Card

FARGO Electronics
Pictura 310e
PrimeraPro

FWB
SledgeHammer 7000 FMF PCI II

Global Village Communication
PowerPort Platinum Pro PC Card

Hewlett-Packard
HP DeskJet 850C Printer
HP LaserJet 5MP Printer
HP ScanJet 4c Scanner

Key Tronic
MacPro Plus

Kodak
Kodak DC40

Matrox Graphics
MGA Millennium

Megahertz
CruiseCard

MicroNet Technology
DataDock

Microtek Lab
ScanMaker IIHR

- **miro Computer Products**
  - miroCHROMA 1152
- **Nanao U.S.A.**
  - FlexScan T2-17TS/Mac
- **Newer Technology**
  - EtherTech L10
  - Memory
- **Nikon Electronic Imaging**
  - ScanTouch
- **Number Nine Visual Technology**
  - Imagine 128 for Macintosh
- **Olympus Image Systems**
  - Deltis CD-R2
- **Polaroid**
  - Circular Polarizer Computer Filters
- **Portrait Display Labs**
  - Pivot 1700
- **Prometheus Products**
  - CyberPhone M288evsp
- **Proxima**
  - Desktop Projector 2810
- **Radius**
  - MultiView 21
  - PrecisionView 21
  - ThunderColor 30 Family Graphics Cards
  - VideoVision Studio
  - VideoVision Studio 2.0
- **Seagate Technology**
  - Macintosh-Compatible Hard Drives
- **Sonic Systems**
  - microPrint Series
  - QuickStream/3
- **TDK Systems**
  - DF2814AP V.34 Data/Fax Modem Card
- **Texas Instruments**
  - microLaser PowerPro/12
- **Truevision**
  - TARGA 2000
- **TView**
  - Presenter TView
- **U.S. Robotics**
  - Sportster 14.4 Fax/Modem for Macintosh
  - Sportster V.34 28.8 Fax/Modem for Macintosh
- **UMAX Technologies**
  - Vista-S8 MacPro 2
- **Verbatim**
  - Rewritable Optical Disk with Stacker Software
- **Visioneer**
  - PaperPort Vx

SOFTWARE

- **Adobe Systems**
  - Adobe After Effects 3.0
  - Adobe Illustrator 6.0
  - Adobe PageMaker 6.0
  - Adobe Persuasion 3.0
  - Adobe Photoshop 3.0
  - Adobe Photoshop 3.0.5
  - Adobe Premiere 4.2
- **Aladdin Systems**
  - StuffIt Deluxe 3.5
- **Apple Computer**
  - Apple Remote Access
  - Macintosh System 7.5
- **Attachmate**
  - MacIRMA Mainframe 5.0
- **Avid Technology**
  - VideoShop 3.0
- **Brøderbund Software**
  - Alien Tales
  - Carmen Sandiego Junior Detective Edition
  - In The 1st Degree
  - Math Workshop
  - The Print Shop Deluxe CD Ensemble
- **Brøderbund Software/Living Books**
  - Dr. Seuss's ABC
- **Casady & Greene**
  - Conflict Catcher 3
  - InfoGenie
- **CE Software**
  - QuickMail 3.5
- **Cheyenne Software**
  - ARCserve for Macintosh 1.5
- **Claris**
  - Amazing Animation 1.0
  - ClarisDraw 1.0
  - ClarisOrganizer 1.0
  - ClarisWorks 4.0
  - FileMaker Pro 3.0
- **Corel**
  - Corel GALLERY 2
  - Corel Stock Photo Library
- **Dantz Development**
  - Retrospect 3.0
- **Delta Point**
  - DeltaGraph Pro 3.5
- **DiagSoft**
  - Peace of Mind 3.0
- **Fractal Design**
  - Painter 4
  - Poser
- **Frame Technology**
  - FrameMaker Release 5
- **FWB**
  - RAID ToolKit Array Software
- **GDT Softworks**
  - PowerPrint 3.0
  - StyleScript Bundle 2.0
- **Graphic Simulations**
  - F/A-18 Hornet 2.0
  - Korean Crisis
- **Grolier Electronic Publishing**
  - The 1996 Grolier Multimedia Encyclopedia
  - The Encyclopedia of Science Fiction
- **Insignia Solutions**
  - SoftWindows 2.0 for Power Macintosh
- **Kent Marsh LTD**
  - FolderBolt Pro
- **Metatolls**
  - Live Picture
- **Macromedia**
  - Director Multimedia Studio
  - Fontographer 4.1
  - FreeHand 5.5
  - SoundEdit 16
- **Metrowerks**
  - CodeWarrior Programming Starter Kit
- **Microsoft**
  - Microsoft Office for Macintosh 4.21
- **Now Software**
  - Now Contact & Up-to-Date 3.5
- **Pantone**
  - PANTONE ColorDrive
- **Peachtree Software**
  - Peachtree Accounting 2.5 for Macintosh
- **Ray Dream**
  - Ray Dream Studio
- **Software Ventures**
  - Internet Valet
- **Specular**
  - Infini-D 3.0
- **Strata**
  - Media Paint 1.0
  - Strata StudioPro 1.75

Do you want to know where to buy the Macintosh-related products shown in this guide?

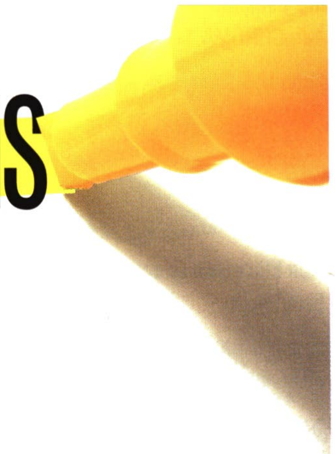
Send for a copy of Apple Computer's latest Apple-Authorized VAR Directory. This helpful guide lists value-added resellers that can not only sell you the products shown here, but can also give you pre-sale consultation and post-sale service support.

Name ____________________

Address (City, State and ZIP Code) ____________________

Fax this coupon to (714) 566-7812, and we'll send you a copy of the directory on CD-ROM!
Offer good while supplies last.

AS FAST AS YOU CAN DO THIS



YOU CAN DO this WITH THIS.

Now available for Macintosh

NEW DATAPEN COPIES TEXT INTO YOUR COMPUTER AS FAST AS YOU CAN DRAG IT ACROSS THE PAGE.

PRIMAX
DATAPEN

SKU numbers

DataPen Mac	385423
DataPen PC	385418
DeskScan Color	385424
ColorMobile Office	385403

Life is good again. Inputting printed data was always the most nagging job with computers. Ask anyone who does research for school or business or keeps records at home or office. There weren't any shortcuts. You had to sit down and type and type and type. Meet DataPen™ and say good-bye to the most time-consuming job you do. Just drag DataPen across the text and bingo, it's in your favorite Macintosh application. Up to 20 times faster than you could type it. Not just simple text, either. DataPen reads eleven languages, accents and all. And any font from 8 to 22 points. DataPen can even be trained to recognize and place spreadsheet data in the correct cells. Setup couldn't be easier. DataPen plugs right into your serial port; every Mac has one. So you have a choice. Type your brains out. Or use your brains. Get the simplest text entry system ever. DataPen from Primax.

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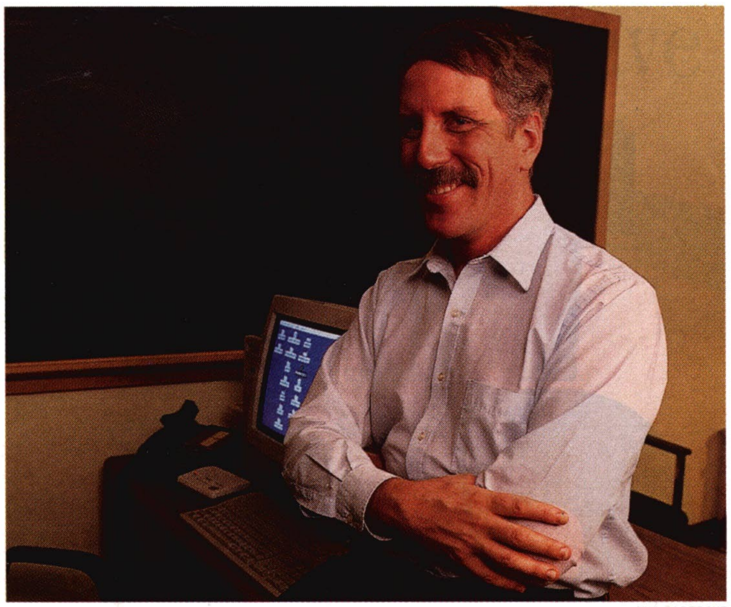
GUEST EDITORIAL G. MORGAN WATKINS

Apple: Remain loyal to your loving family



BILL ALBRECHT

G. Morgan Watkins designs large computer facilities at the University of Texas at Austin and has direct control over more Macs than he can count.

Several weeks ago, I was sitting at the top of the stairs in my home with my arms wrapped around my 7-year-old son.

"Richard," I said, "Why do you love me so much?"

"Well, Dad," he replied, "I'm getting used to you."

Familiarity is a powerful bond. I've always been a part of his world, and he plans to keep it that way. All I have to do is keep caring.

Those same comfortable feelings drive my loyalty to Apple. We've become family. Even with some of the recent rumors about the imminent demise of Apple, there are plenty of us who are not planning to disown the company.

I keep hearing noise about how the only way to save Apple is to marry her off. Merge with some big powerful company and let him take care of her. Not likely.

> It's time for computing to become even more personal. Look-and-feel should become hug-and-squeeze.

IBM Corp. has been suggested as a possible groom. A walk to the altar with that behemoth would kill the artist in Apple. IBM has never been able to design or market innovative microcomputer software successfully. We'd all have to kiss the Mac OS good-bye. No thanks, and keep your Token-Ring.

The affair between Apple and Novell Inc. was blessedly short. Scared me for a bit. All Novell offered was a network OS that was difficult to manage, expensive to maintain and none too pretty. Guys can be like that.

If you believe industry gossip, there are a lot of other companies interested in courting Apple. Unfortunately for the suitors, Apple would be hell to live with. What makes Apple so attractive is her independent spirit and unwillingness to do what is expected.

I've begun to worry that there might be some truth to the rumor that Hewlett-Packard Co. would like to tie the knot with Apple. I don't want to see anyone hurt. What do they have in common? Sharing the same solar system is not enough to hold most marriages together. HP is successful because he is technically strong and consistently boring. For Apple to be happy, she needs to take chances and set the world on fire. Even if it means recalling the batteries later.

If Apple ever did decide to pair up, a good partner would be Motorola Inc. They've already established a bloodline, bringing millions of Macs into the world. Motorola would be enhanced, not threatened, by the Apple identity. His diversity and her innovative nature could spawn new businesses.

However, Apple does not need to move in with someone else to survive. If Apple would show a little more faith in herself, the confidence of the outside world could be restored. Sticking with a business plan long enough to see if it works and spending more time looking out for those who love her would be a good start.

Michael Spindler is doing neither. Early last year, he announced a major shake-up, pondered it for six months, began the implementation and then promptly changed his mind. Apple lost credibility, and a lot of really bright Apple employees left, some because they were kicked out, others because they lost faith. Cleaning house is fine, but Spindler has been cutting, not caring. That kills innovation and the will to win. Perhaps it is time for someone with the calm, intelligent demeanor of a Jim Buckley (currently running Apple Americas) to head the household.

The greatest risk to Apple right now is in losing third-party developers. No innovation means no reason to stick with the Mac. The way to keep, and gain, developer support is to treat them well and give them the world's most exciting platform to work on.

Apple needs to listen very carefully. It's getting pretty quiet out there. In-house Macintosh development has dropped this past year. And, I'm afraid, it cannot all be blamed on Microsoft Corp.

Developers may look a little disheveled, but they need Apple's loving too. Apple must say it with consistency and timeliness. It must deliver synchronized releases of development tools and make seed units available to the smaller entrepreneurs, as well as set up an attractive leasing program so that developers can more easily afford to stay current. And, most important, get real. Quit trying to turn developers into a revenue source. It seems moronic to charge folks for the privilege of saving your butt.

Apple should move beyond the point-and-click of desktop computing. Everybody's got that now. It's time for computing to become even more personal. Look-and-feel should become hug-and-squeeze.

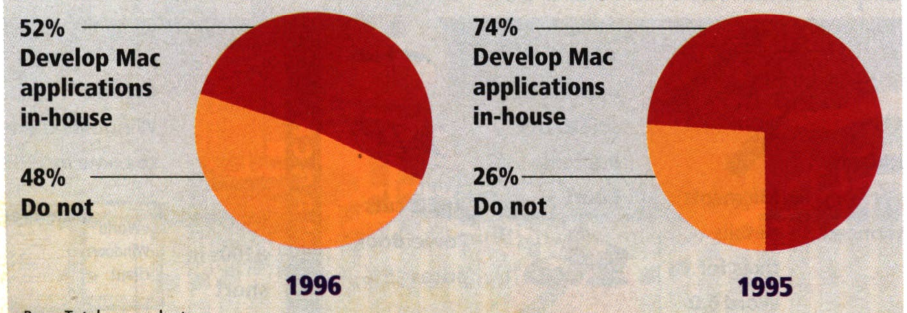
There are many ways for Apple to stand out. The Internet and cellular technologies have grabbed center stage with businesses and consumers. Integrate Macintosh telephony, text-to-speech and speech recognition with powerful search engines. Call your Mac, read your mail and surf the World-Wide Web.

Apple should forge the way in hands-free computing. Move away from the dependence on monitors and input devices. Enhance the interface with video input. I want my machine to understand not only my voice but my gestures as well. That would attract new customers and developers.

Apple, you've done it before. Your family is ready for the grander experience. Take the next leap. We'll be waiting at the top of the stairs. □

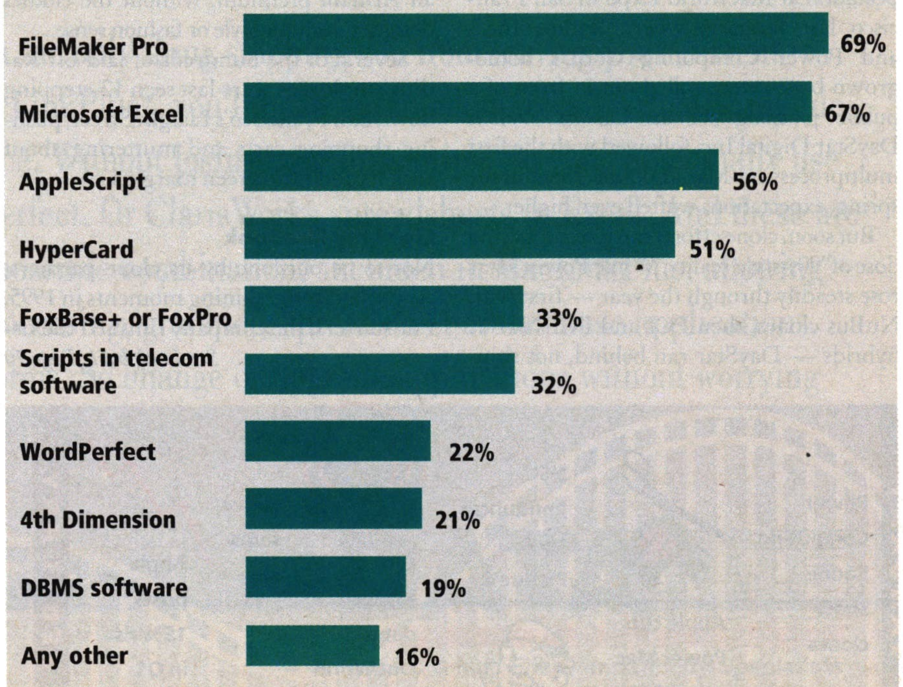
G. Morgan Watkins is the manager of microcomputer technologies at The University of Texas at Austin and co-author of "The Educator's Guide to HyperCard and HyperTalk." Contact Watkins at watkins@mail.utexas.edu.

Sites that develop in-house Mac applications (compared to 1995 State of Mac Management report)



Base: Total respondents.

Applications that are customized for in-house use



Base: Respondents who customize/enhance off-the shelf Mac programs.

THE MAC CAROUSEL

Clones, clowns, kludges main attractions in 1995

By MacWEEK staff

Jan. 1, 1996 — America loves a parade, especially when it involves freaks, geeks and sneak peeks. The Mac industry offered spectacles aplenty in 1995, though some bore closer resemblance to multiple-car pileups. Still, we can't resist rubbernecking …

Everybody must get clones

Taking a cue from Bob Dylan, customers rallied behind the clones early this year as the first fruits of Mac OS licensing were announced.

The atmosphere was redolent with expectation at Macworld Expo in San Francisco last January, where Radius Inc.'s and Power Computing Corp.'s homegrown boxes were rolled out in front of a public jonesing for an OS fix. When DayStar Digital Inc. followed with the first multiprocessing-Mac announcement in the spring, expectations wafted even higher.

But soon, clone efforts ran into a sobering dose of '90s-style reality. While Power's star rose steadily through the year — first with NuBus clones, then PCI and PCI-NuBus hybrids — DayStar ran behind, not shipping its rookie effort until the fall.

And then there was Radius. The company's two attempts at Mac compatibility were left standing on the loading dock: a high-end NuBus system followed by a mainstream Mac built by IBM Corp. Both sold for an Armani premium, without the clothes designer's unique style or fashion sense.

Several of the hundreds of laid-off Radius employees were last seen 12-stepping down San Francisco's Haight Street, pushing shopping carts and muttering about rockets and little green margins.

Light my FireBook

Not to be outdone by its clone partners, Apple had some shining moments in 1995. For starters, the company finished the fis-

See Look back, Page 70

1996: A MacWEEK oracle foretells Apple's comeback

By Andrew Gore

Jan. 1, 1997 — "Imagine there's no Microsoft, it's easy if you try." These words in Apple's 1996 ad campaign, licensed by Yoko Ono for a rumored $14 million, were the cornerstone of a promotional blitz ushering in the first major update to the company's image since 1984.

The "Imagine" campaign, which got its start under former marketing guru Dan Eilers in 1995's anti-Windows 95 offensive, started a whole new marketing approach for Apple: aggressive, irreverent TV and print advertising pushing the strengths of the Mac and soundly slamming competitors.

Reality bytes

Dubbed "Reality Advertising" by Apple, the first in the series of ads was called "Reality Test," which used a split screen to show a Mac user and a Windows 95 user working with their computers.

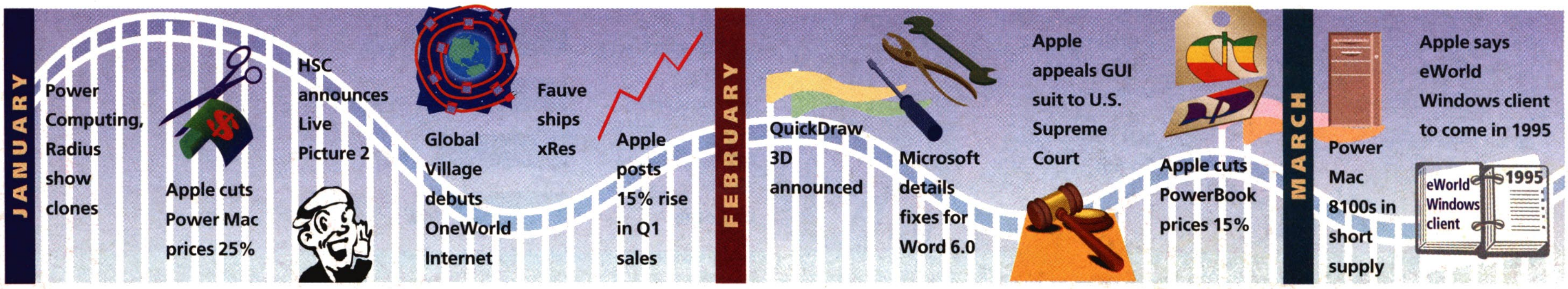
"It was funnier than hell," recounted an IS manager at Lockheed Corp., who requested anonymity. "The Mac worker finished a report in Word, the PC user did the same; the Mac user opened an org chart in Illustrator, the PC user also opened an org chart; the Mac user dragged and dropped his company's logo from Adobe Photoshop, the PC user tried to open Photoshop, but his system crashed."

By the end of the 30-second spot, the Mac user opened a half dozen applications and finished almost as many projects. The PC user spent the rest of the commercial trying to restart his system. In the end, he pulled out a .357 Magnum and blew a hole through the PC; the Mac user went for coffee with a co-worker.

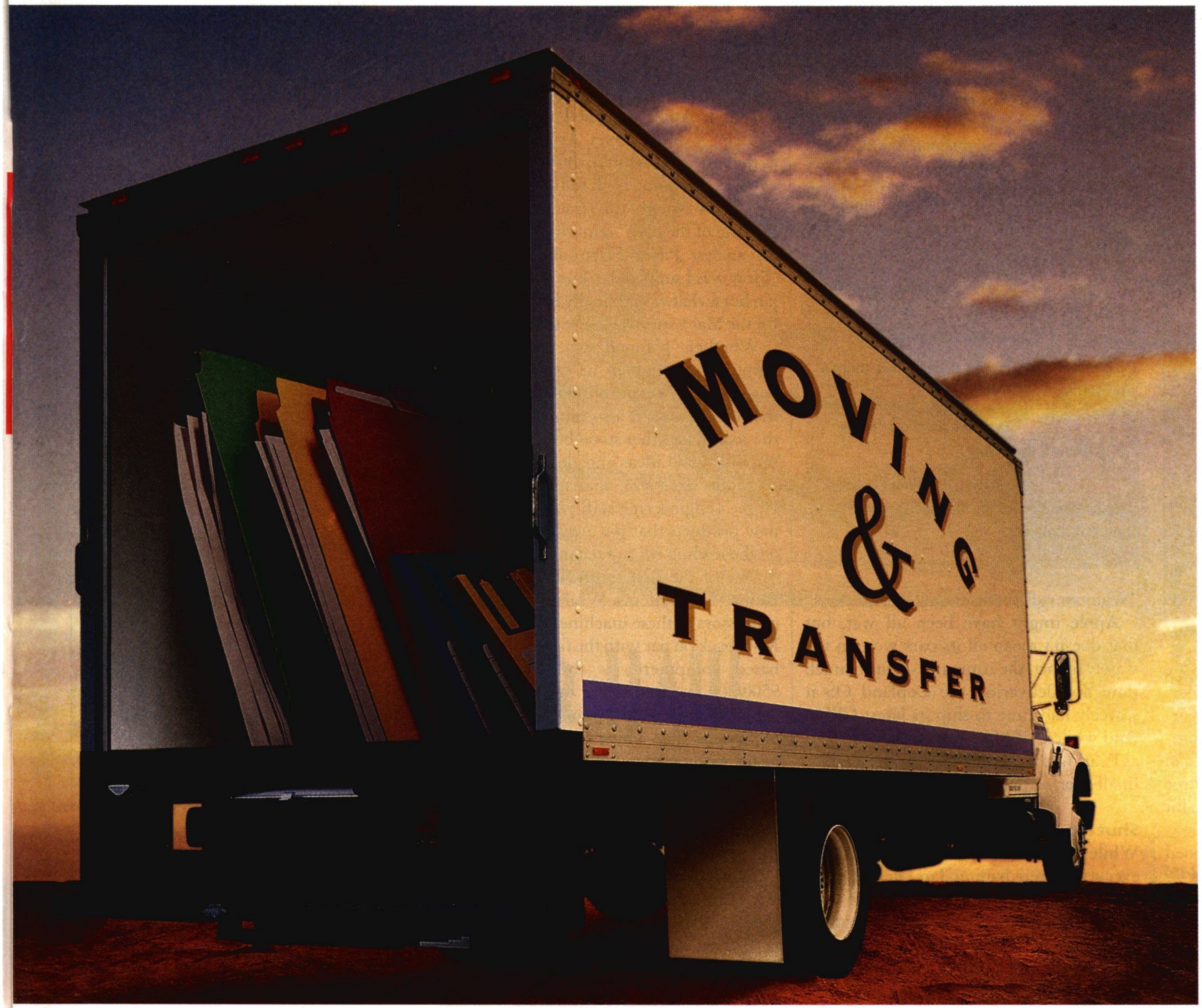
The ad ended with the words, "Looks can be deceiving; test it for yourself."

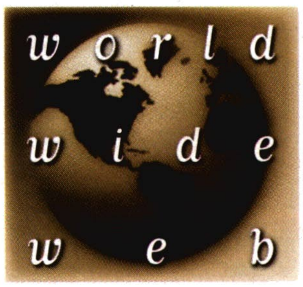
"Reality Test" would go on to win several awards.

See Look forward, Page 70


JANUARY
Power Computing, Radius show clones
Apple cuts Power Mac prices 25%
HSC announces Live Picture 2
Global Village debuts OneWorld Internet
Fauve ships xRes
Apple posts 15% rise in Q1 sales
FEBRUARY
QuickDraw 3D announced
Microsoft details fixes for Word 6.0
Apple appeals GUI suit to U.S. Supreme Court
Apple cuts PowerBook prices 15%
MARCH
Power Mac 8100s in short supply
Apple says eWorld Windows client to come in 1995
eWorld Windows client
1995

Just Because You're Moving To A New Word Processor Doesn't Mean You Have To Leave Your Files Behind.





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Windows doublespeak

GORDON STUDER

“Apple says, ‘Hey, Win 3.1 is crummy and it always was crummy.’ And we say, ‘No, it just turned crummy. It was really great till Thursday.’ ”

— Microsoft CEO Bill Gates in August, making the pitch that bipolar mood swings are great for the computer industry.

The House of Mirrors

CE Software’s TeamVision: Cranking out Technology Roadmaps won’t get you anywhere without a real product.

Copland: Announcing a new schedule doesn’t suddenly mean you’re now on time.

CorelDraw: As late as the annual spring thaw on the Ottawa River.

FireWire: Sony Corp. may kindle the interface a little longer for multimedia. But without real products soon, as a SCSI replacement it may fizzle.

GeoPort: Anything at all, but especially PBX and ISDN connections that were promised in the pre-Power Mac era.

Gershwin: The only OS to go from vapor to vacuum.

Quark Inc.’s Imedia (a k a Orion): If publishers kept to these deadlines, there’d be nothing to read.

QuickDraw GX: Let’s see if we can land a fifth product in 1996.

Visual Basic: OK, so Microsoft has already said it won’t do VB for the Mac. Doesn’t mean it shouldn’t.

Look back

From Page 68

cal year with a record $3 billion in quarterly sales, making it an $11 billion company. The installed Mac base hit more than 20 million, twice what it was just three years ago. And domestic market share hit 11.5 percent in 1995.

Apple delivered its much-ballyhooed PCI Macs and its hot new 5000 series — maybe too hot for owners of the world’s first flammable portables.

Long before faulty batteries caused a PowerBook recall, Apple set imaginations on fire with QuickDraw 3D, which made swapping 3-D files as friendly as members of Up With People.

Apple also continued to fiddle with moribund technologies. Take QuickDraw GX, for instance, which was crushed beneath the sandal of industry titan Adobe Systems Inc. (Adobe, of course, had other fish to fry, such as buying everything that Microsoft Corp. hadn’t.)

And while we’re on the subject of things fishy, eWorld floated to the top of the tank last year; Apple’s on-line vessel was a bigger washout than “Waterworld.” (At least “Waterworld” made money in Europe.)

Apple might have been all wet, but that doesn’t mean all its oars were in the water. In fact, the company spent so much time not delivering the Copland OS it scarcely had time to ship its latest CPUs. And while PCI Macs were as hard to find as Pearl Jam tickets, at least Eddie Vedder finally performed.

Shut me down

While Apple wasn’t shipping, company executives were bailing. Ian Diery, Joseph Graziano, Dan Eilers and a host of supporting characters disappeared faster than you could say “golden parachute.”

Speaking of the reasonable-pay impaired, the Rolling Stones came at a stiffer price than even an escort provided by Hollywood madam Heidi Fleiss — 12 million bucks. That’s the size of the wad rock ’n’ roll animal Bill Gates reportedly stuffed into Mick Jagger’s spandex for the rights to “Start Me Up,” the official song of the most expensive computer-product launch ever — Windows 95.

But don’t cry for Bill, Redmond, Wash.: The Windows 95 debut put a mighty strain on Microsoft’s support lines — frustrated users couldn’t get through to air their gripes

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Look forward

From Page 68

“The commercial did something I never got our VP to do: Smile when he thought of the Mac,” said the Lockheed manager. “It was a little thing, but I think it helped clear the way for us to re-evaluate dumping the Mac platform.”

Products ascending

In the wake of a corporate blood bath early in the year, in which several vice presidents resigned, Apple returned to a very old strategy — move boxes. As many insiders at the time commented, the old/new strategy was like going back to 1984.

“I really thought this strategy was the beginning of the end,” remarked Mac industry analyst Pieter Hartsook on April 1. “How was I supposed to know it was a Trojan horse that would finally bring the battle for the Mac’s survival home to Apple?”

Whether planned or serendipitous, Apple’s reduction in its executive ranks and work force simplified the decision-making process; it also removed many of the roadblocks that stood between coming up with good ideas and delivering them. Without excessive managerial control, Apple’s engineering staff was able to build new products that put Apple solidly back on the leading edge of technology.

One of the first to hit was the “Speed Bump” PCI systems. While the upgraded processors of these machines put high-end Macs back on par with the fastest Pentium-based computers — the Power Mac 9500/200 featured either one or two 200-MHz 604 chips — the simultaneous release of System 7.7, which included a much faster native version of the File Manager, gave new and old Power Macs an uncanny speed boost. The arrival of a fully debugged Open Transport 1.3 also helped the operating system.

These computers would be followed in the summer by the Performa 5500 and 6500, and the LC 5500 and 6500, the first PCI-based consumer Macs. The 120-MHz 603e 6500 benchmarked at the speed of a 100-MHz 604-based Mac but cost only $2,000 for a complete system, including a 15-inch color monitor and software.

Even in the normally slow summer selling season, the PCI Performas were hot, especially after the $200 Sony PlayStation card came out, allowing PCI Macs to run PlayStation titles. The arrival at Comdex/Fall ’96 of two inexpensive Power Mac Performas — with prices starting at $1,300 — and the first-ever tower Performa designed for the small office-home office market, helped make for a Performa Christmas in ’96.

Goin’ mobile

For those of a more mobile bent, Apple began digging itself out of the hole it had made for itself in that market.

The PowerBook 6000 series, which shipped at August Macworld Expo ’96 in Boston, took the market by storm. While not offering any significant innovation, the new all-in-one combined a complete, bug-free feature set in a sophisticated design. The addition of two bays to the front of the portable — one for a lithium-ion battery and the other either for a second battery, hard drive, floppy or even a full-size CD-ROM drive — gave the 6000s flexibility

See Look forward, Page 74

Playing it close to the vest

GORDON STUDER

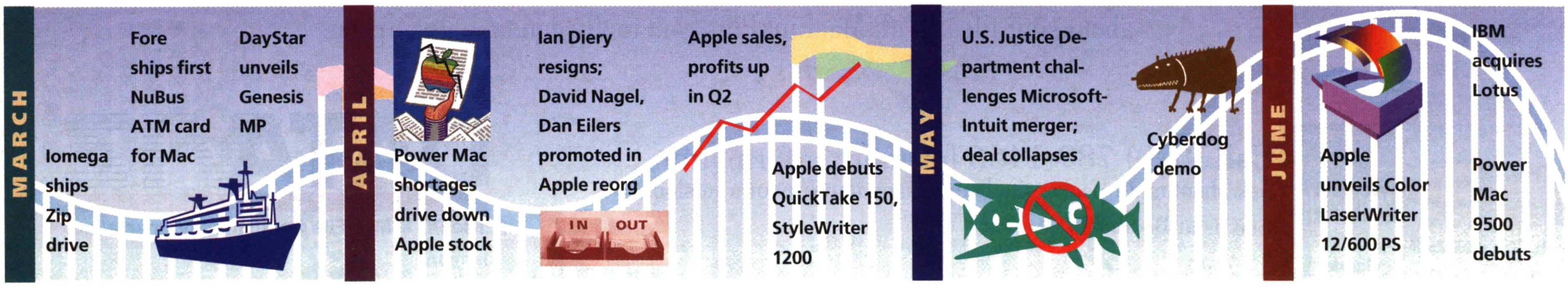
“We’re not staking our entire future on a particular release.”

— Apple CEO Michael Spindler in January, wisely hedging bets on the soon-to-be-delayed Copland OS.

Don’t believe the hype

“Win 95 is the most overhyped product in the history of the PC industry; even more than Newton.”

— Michael Mace, Apple’s director of Mac platform marketing, in August. The taste of very, very sour grapes lingers on his palate.


MARCH
Iomega ships Zip drive
Fore ships first NuBus ATM card for Mac
DayStar unveils Genesis MP
APRIL
Power Mac shortages drive down Apple stock
IN
OUT
Ian Diery resigns; David Nagel, Dan Eilers promoted in Apple reorg
Apple sales, profits up in Q2
Apple debuts QuickTake 150, StyleWriter 1200
MAY
U.S. Justice Department challenges Microsoft-Intuit merger; deal collapses
Cyberdog demo
JUNE
Apple unveils Color LaserWriter 12/600 PS
IBM acquires Lotus
Power Mac 9500 debuts

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FOUR MEETINGS
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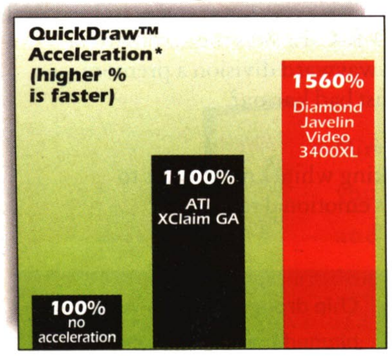

Resolution	Colors (with 2 MB)	Colors (with 4MB)
640 x 480	16.7M	16.7M
800 x 600	16.7M	16.7M
1152 x 870	65k	16.7M
1280 x 1024	256	65k
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*Based on QuickDraw acceleration tests using Ziff-Davis MacBench 2.0. Tests completed on a Power Mac 9500/120 with a resolution of 1024 x 768 at 16.7 million colors.

Fry's Electronics   Computer City Supercenter   CompUSA The Computer Superstore   Egghead Software

Devil's Dictionary 1996

Adobe: A surprisingly strong building material, at least when building a software monopoly.

Apple solutions: A strategy for seeding the industry with former vice presidents.

Apple QA: A trick question.

CHRP: Common hardware = redundant products.

CI Labs: What you call a technology joint venture that is designed to be nonprofit.

Digital video editing: Technospeak for "make my computer scream in pain."

Fast Ethernet: The act of feeding your network a 10BASE T diet with 100BASE T cards (see Open Transport below).

Newton 2.0: The first documented example of The Doonesbury Effect. (Now, if we can just get Dilbert to make fun of System 7.5, we'd have Copland by March.)

Open Transport: The transit system that runs on that road paved with good intentions.

Power Computing: The ghost of Apple past.

PowerPC Platform: The campaign to make Intel a historical footnote.

QuickTime VR: The new fall TV show starring George Clooney as an emergency Macintosh repairman.

Radius: The distance between an aggressive mainstream clone strategy and IBM's ability to deliver cost-effective Macs.

Sagan, Carl: A 20th century astronomer famous for suing everyone, including whoever code-named the planet "Uranus." See also BHA (butthead astronomer) and LAW (lawyers are wimps).

URL: Useless, random location.

Windows 95: How many closed windows users must toss their PCs through in frustration before successfully upgrading to Microsoft's latest operating system.

World Wide Web: That tangled thing we weave when first trying to make the Internet friendly.

Zip: The sound of a body bag being closed around SyQuest's EZ135 drive.

Look back

From Page 70

about software problems and steep upgrade costs; maybe they would have had better luck calling a psychic hot line.

Strange days

While on the topic of pop culture phenomena: You'd have to be Amish not to notice the Internet craze that transfixed the world, much as citizens band radios captured America's collective unconscious in the '70s. But, of course, few of those earlier crazes needed as many accouterments — browsers, URLs and bookmarks.

The Initial Public Offering of The Year award went to Netscape Communications Corp. The baying of investors pushed the stock into the stratosphere and even inspired a joke:

Q: What were Jerry Garcia's last words?

A: "Netscape closed at WHAT?"

Of course, Adobe jumped smack in the middle of the World Wide Web-fest when it bought Ceneca Communications Inc., maker of PageMill and SiteMill. Not surprising. In 1995, Adobe acquired a wealth of talent. Besides Ceneca, the company picked up Frame Technology Corp., makers of FrameMaker, adding a second desktop publishing application to its PageMaker arsenal.

To every thesis there must be an antithesis. Adobe's dwarfish doppelganger, Macromedia Inc., tamed Fauve Software Inc. and slurped up Altsys Corp. as if it were a bluepoint oyster.

And with its $2.1 billion bid for Intuit Inc. blocked by the United States Justice Department for anti-competitive reasons, Microsoft finally appeared to bite off something it couldn't chew.

You say PPCP, I say CHRP

For those craving the meat and potatoes of storage, Iomega Corp.'s Zip and SyQuest Technology Inc.'s EZ135 drives had megabytes for cheap. Microsoft served up something as well; unfortunately, it was the final update to Word 6.

Few products landed with as big a thud as Microsoft Word 6.0.1, which delivered as little speed as a certain white Bronco. Users and journalists alike deep-sixed the unwieldy program.

Nonetheless, Microsoft held onto a substantial chunk of the Mac word processing market, and it had an unlikely source to thank: Novell Inc. After two years of wringing meager profits out of its WordPerfect Business Applications Division, Novell pulled the plug, vowing to concentrate instead on its core networking business.

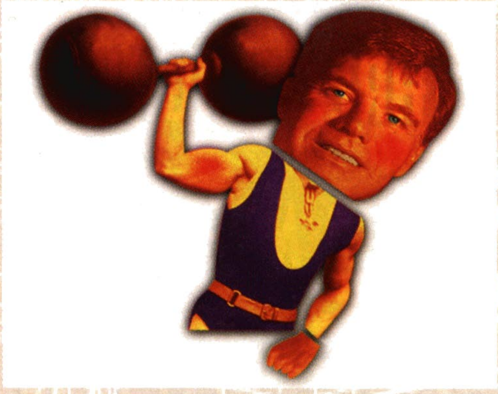
Even this solid blow to the solar plexus couldn't keep the Dynamic Trio down. IBM, Motorola Inc. and Apple arrived just in time to deliver the "you can call it Common Hardware Reference Platform (CHRP) or you can call it PowerPC Platform (PPCP)" speech.

And, as if to highlight the fact that it ain't over till it's over, UMAX Data Systems Inc. signed aboard the Good Ship Macintosh, lending a certain *je ne sais quoi* to the PPCP announcement. Despite Quix Computerware A.G.'s efforts to distract erstwhile clone makers with its Mac OS translation API for the PPCP, by the time Comdex/Fall '95 rolled around in November, it became obvious that in 1996, it would be in with the new and out with the PPCP. □

Pumping up customer service and support

"Some of the things that we've done [regarding customer support] have been really boneheaded in the past, and we have to fix them."

— Quark Chairman Tim Gill, in October, reflecting on Quark's grand tradition of putting the customer last.



GORDON STUDER

Tunnel of Love

May

Microsoft-Intuit merger falls through

Even Microsoft sometimes fails to score: Justice Department dumps cold water on $2.1 billion deal.

AOL acquires WAIS and Medior

The on-line company will hit on anything and everything Internet in its information-superhighway path.

June

AOL buys GNN

AOL consummates its threesome by taking on Internet-access services provider GNN.

IBM buys Lotus

How suite it is: Megadeal would make Gleason proud. It certainly made former Lotus CEO Jim Manzi rich.

Adobe buys Frame

Combined with 1994 acquisition of Aldus, Adobe elbows Microsoft out of the way to become largest Mac developer.

July

Symantec buys Delrina

Symantec's umpteenth buyout means developer has engendered as many acquisitions as software titles over the past few years.

September

Macromedia acquires Fauve

Scripting power may help Macromedia fulfill fantasy of becoming chief potentate in media authoring.

StarNine carries off Microsoft Mail

Wait a minute, Mr. Postman! The AppleTalk client is in the mail.

Adobe seduces Ceneca

Sweetheart deal gives Adobe inside track on the Internet; picks up PageMill and SiteMill.

October

Quarterdeck acquires StarNine; Cisco buys Grand Junction Networks

Merger mania spawns networking lovefest.

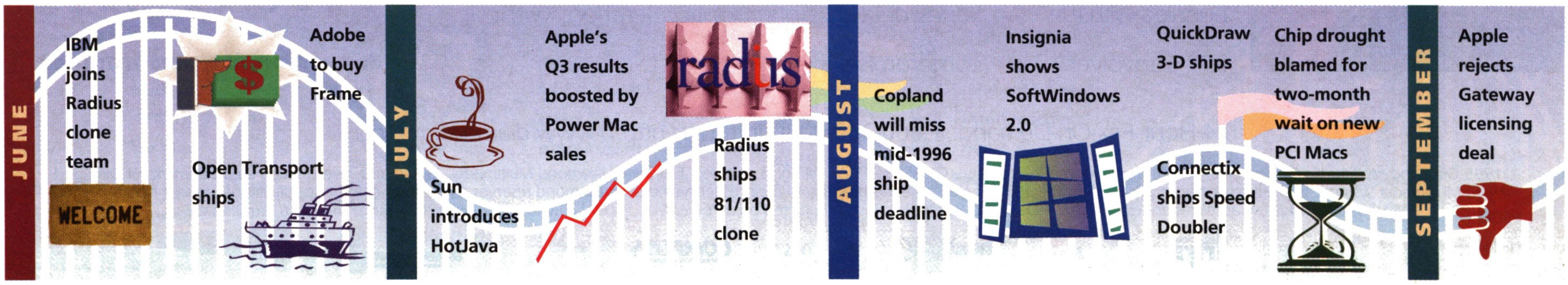
November

Novell to dump WordPerfect Business Applications Division and AppWare

D-I-V-O-R-C-E: Was the acronym for Novell's wayward division a premonition or just bad karma?

InterCon to pick up eWorld

Networking white knight rides to eWorld's emotional rescue.


JUNE
IBM joins Radius clone team
WELCOME
Adobe to buy Frame
Open Transport ships
JULY
Sun introduces HotJava
Apple's Q3 results boosted by Power Mac sales
radius
Radius ships 81/110 clone
AUGUST
Copland will miss mid-1996 ship deadline
Insignia shows SoftWindows 2.0
QuickDraw 3-D ships
Connectix ships Speed Doubler
Chip drought blamed for two-month wait on new PCI Macs
SEPTEMBER
Apple rejects Gateway licensing deal

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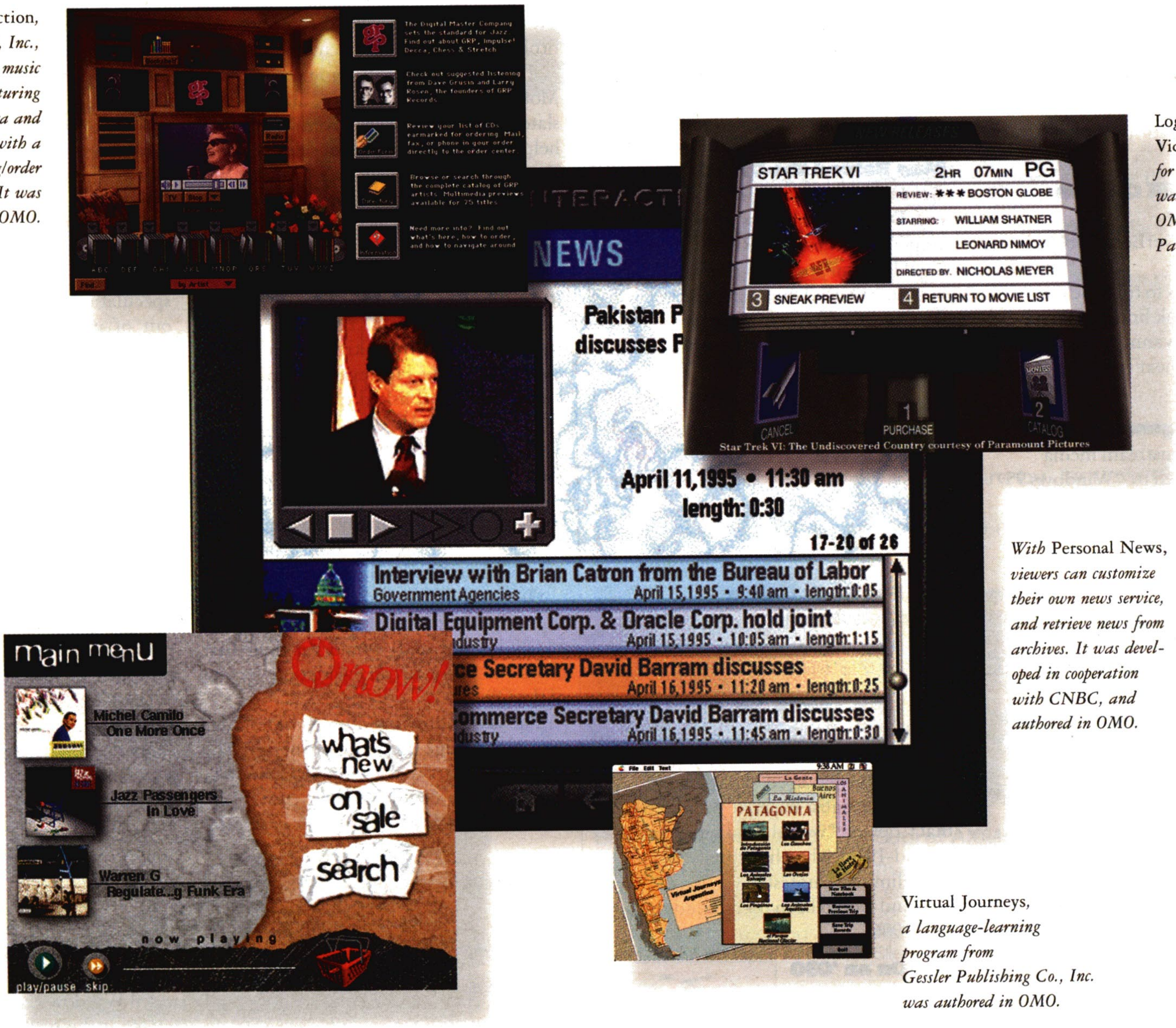
NEWS
Pakistan P
discusses F
April 11, 1995 • 11:30 am
length: 0:30
17-20 of 26
Interview with Brian Catron from the Bureau of Labor
Government Agencies
April 15, 1995 • 9:40 am • length: 0:05
Digital Equipment Corp. & Oracle Corp. hold joint
April 15, 1995 • 10:05 am • length: 1:15
ce Secretary David Barram discusses
April 16, 1995 • 11:20 am • length: 0:25
ommerce Secretary David Barram discusses
April 16, 1995 • 11:45 am • length: 0:30
STAR TREK VI
2HR 07MIN PG
REVIEW: ★★★ BOSTON GLOBE
STARRING: WILLIAM SHATNER
LEONARD NIMOY
DIRECTED BY NICHOLAS MEYER
3 SNEAK PREVIEW
4 RETURN TO MOVIE LIST
CANCEL
1 PURCHASE
2 CATALOG
Star Trek VI: The Undiscovered Country courtesy of Paramount Pictures
main menu
Michel Camilo
One More Once
Jazz Passengers
In Love
Warren G
Regulate...g Funk Era
now playing
play/pause
skip
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what's new
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The GRP Collection, *from* N2K, Inc., *combines a jazz music sampler featuring labels like Decca and Chess, with a catalog/order application. It was authored in* OMO.

Logica Interactive Video Environment, *for video-on-demand, was authored in* OMO. *Courtesy of* Paramount Pictures.

With Personal News, *viewers can customize their own news service, and retrieve news from archives. It was developed in cooperation with* CNBC, *and authored in* OMO.

CD-Now *is a music catalog shopping application which allows users to preview, sample and purchase cassettes and CDs. It was authored in* OMO.

Virtual Journeys, *a language-learning program from* Gessler Publishing Co., Inc. *was authored in* OMO.

Director is great for authoring CD-ROMs. So is Oracle Media Objects. But OMO is also the only tool which will let you author exciting applications that can be distributed across networks: from LANs to the Internet to ISDN and interactive TV. Director won't. And OMO allows easy access and manipulation of relational data. Director doesn't. Director costs about $900. For a limited time, get OMO for just $99*. Call 1.800.633.0726. Or download a *free* trial version at http://www.oracle.com/

To join our New Media Alliance developer program contact us at
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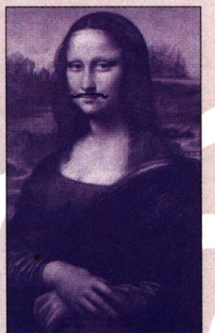
MacWEEK's 1995 Daze of the Year awards



The Demi Moore Citation for Outstanding Performance in a Historical Classic
Goes to: eWorld
For: eWorld. The next time you remake a service, at least make sure the remake offers more than the original.

The Ed Wood Memorial Award
Goes to: Adobe Systems Inc.
For: Being the monster amoeba from outer space that grows steadily larger on the bodies of unsuspecting software companies.

The Milli Vanilli Citation for Originality
Goes to: The PowerBook 5300 engineering team
For: Doing its best to turn the innovative PowerBook line into yet another ThinkPad wannabe. Here's a good idea for the next round: expandable keyboards!

The Hidden Agenda Award
Goes to: The mainstream media
For: Being suckered by "Windows 95 is the death of the Mac" propaganda. Is that record $11 billion in 1995 sales really the first sign of corporate apocalypse?

The It's Only Illegal If You Get Caught Award
Goes to: Whoever keeps planting those phony Apple buyout rumors
For: Deftly manipulating Apple's stock price year after year by capitalizing on the fact that most Wall Street traders have the long-term memory of ketchup.

The Giant Sucking Sound Award
Goes to: Joseph Graziano, Dan Eilers, Ian Diery, etc.
For: Graciously making room for all those Apple middle managers to advance their careers.

The Thomas Wolfe Was Right Award
Goes to: Guy Kawasaki
For: Proving once and for all that you can't go home again — unless there's an Apple Fellow title and a $100K-plus salary in it for you.

The Paper Tiger Award
Goes to: Novell Inc.
For: Not spending a dime to market WordPerfect after Word 6 stumbled and then dumping the word processor the first chance the company got.

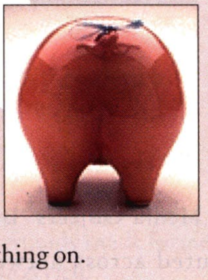
The Svengali Stock Award
Goes to: Netscape Communications Corp.
For: Fueling one of the biggest initial public offerings in the history of computing based on the success of the most popular commercial freeware ever. Don't ask how Netscape will make money; just remember that common sense and stock speculation don't mix.

The Pay No Attention to That Man Behind the Curtain Award
Goes to: Connectix Corp.
For: Doing the thankless job of fixing Apple's mistakes. First RAM Doubler, then Speed Doubler and finally bundling QuickTime Conferencing with the QuickCam were promises made by Apple but delivered by Connectix.

The We Have Met the Enemy and It Is Us Award
Goes to: Apple executives
For: Making 1995 a banner year in Apple screw-ups.

The Pet Rock With a Function Award
Goes to: Iomega Corp.
For: The Zip drive

The Boss Tweed Award for Public Speaking
Goes to: David Nagel
For: His keynote speech at Macworld Expo last August when he promised that Copland "would be in users' hands by mid-1996" when he actually meant "a preliminary, untested version of Copland would be in users' hands by mid-1996."



The On an '030 It Runs Backward Award
Goes to: Word 6.0.x
For: Being the software equivalent of 57 channels with nothing on.

Look forward

From Page 70

never before seen in a PowerBook. And Apple Taiwanese manufacturing partner Quanta Computers gave the notebook something else no top-of-the-line Mac portable had: a price tag starting at less than $2,000.

Even Newton made a comeback last year. Although a rumored buyout of the group never materialized, the Newton 2.0 upgrade gave growing credibility to Apple's PDA platform.

Increasing support from Mac and Windows users created a bump in sales, and, although Apple spent little marketing the MessagePad, the handheld computer still broke sales records by a factor of two.

The arrival of new Newton designs from Motorola Inc., Sharp Corp. and the first slate-shaped Newton from Panasonic helped drive total platform sales to 1 million by year-end. Newton's growing success may be driving rumored negotiations with Hewlett-Packard Co. to adopt the Newton OS.

In search of Copland

The arrival of System 7.7 added new vitality to an OS slowly choking to death on its own legacy code. However, this still didn't answer the most asked question of 1996: Where's Copland?

Shipping Developer Release 1 at the Apple Worldwide Developers Conference in May '96 helped bolster support from third-party vendors, many of whom found Developer Release 0 to be insufficient to start work on Copland-savvy code.

However, it wouldn't be until August that a "select group of users" (eventually 50,000 by year-end) would get their first chance to play with an evaluation version of the OS.

The slowly growing number of test sites spawned a huge user-support nightmare: First, customers tied up support lines asking how they could get their copies and later called asking how to work with purloined copies — or just how to remove the OS and recover their data.

The firing squad

"If anybody makes a Mac cheaper than we do from a cost standpoint, with our volume of a couple million machines, we should be shot."

— Apple CEO Michael Spindler in January. Do you want the cigarette or the blindfold first, captain?

Cheapest form of flattery

"If you do everything the way Apple does, you can't [build a cheaper clone]."

— Radius CEO Chuck Berger in January, predicting his company could do Apple one better and make its CPUs even more expensively.

However, even with distribution and support problems, the wide release of a Copland beta did improve spirits in the Mac community as the future of the Mac went from promises to test-ready product.

The news wasn't so good for the PowerPC Platform (PPCP) version of System 7.7.x. The Mac OS for PPCP-based systems still hadn't shipped as of early December. This is causing widespread speculation that Apple is trying to weasel out of its commitment to the common platform and OS licensing for fear of what it would do to its sales. However, MacWEEK sources confirmed company statements that almost all other system software efforts have been delayed because Copland development has drained company resources.

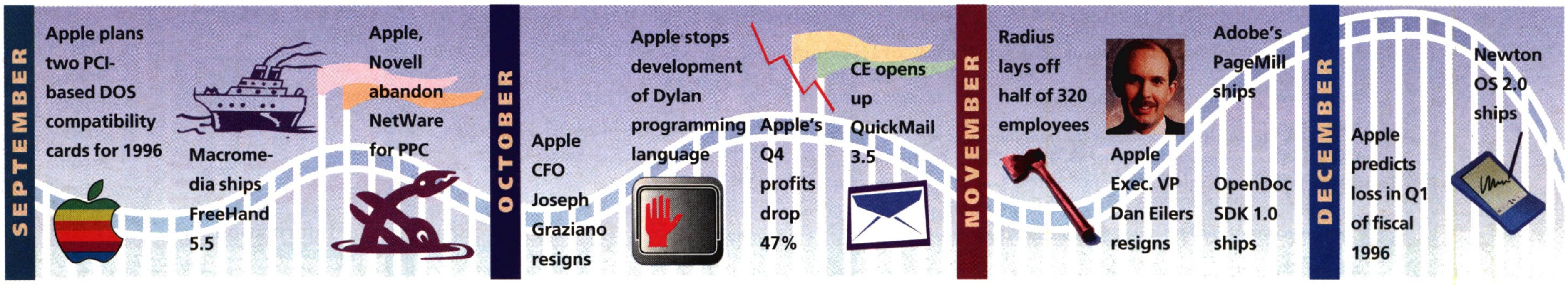
Not PC

The term "Not PC" came into common parlance after the concluding piece of the Imagine campaign aired, which compared political correctness to deciding which computer to buy.

In the ad, titled "Think for Yourself," one person is asking another why he is about to buy a Compaq machine. The buyer's response: "I'm supposed to … aren't I?" The ad ends with the slogan: Macintosh, because it's Not PC.

This commercial best expressed the change at Apple in '96 — from tense coexistence to all-out war with Pentium-based computers and Windows 95. Although this ad no doubt troubled negotiations between Apple and Microsoft Corp. to sell Windows NT with the Copland interface, it helped turn 1996 into the best Christmas quarter ever for Apple.

It also confirmed that '96 was the year Apple went from the geeky kid who always got beat up to the Chuck Norris of the computer set. Mac users can only Imagine what 1996 would have been like without this new, funkier Apple attitude. □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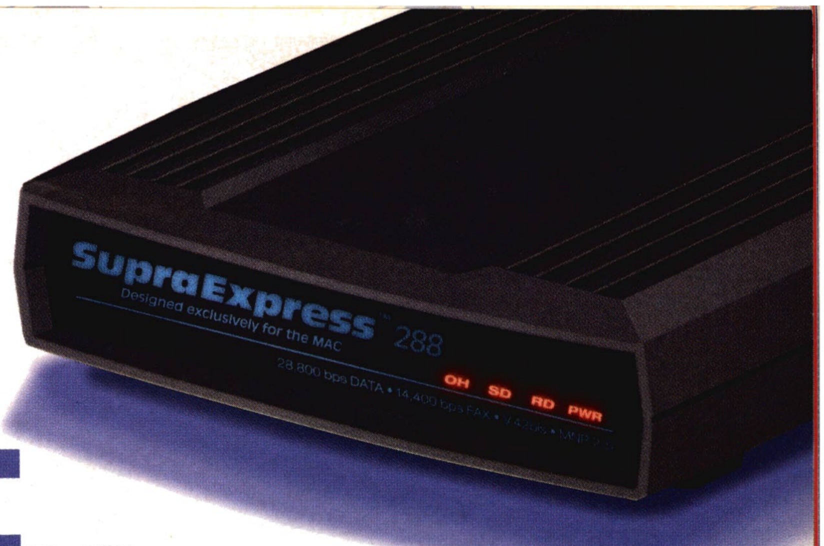
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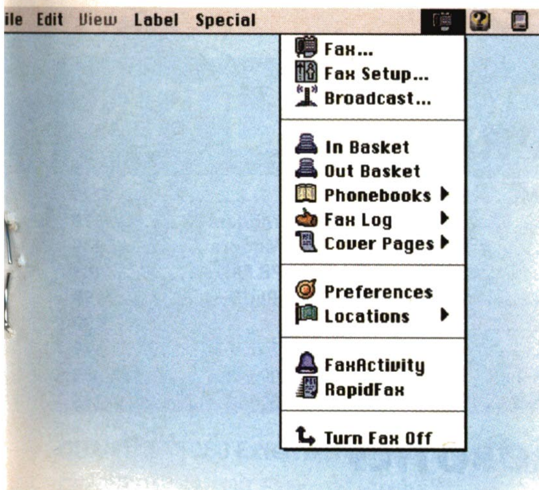
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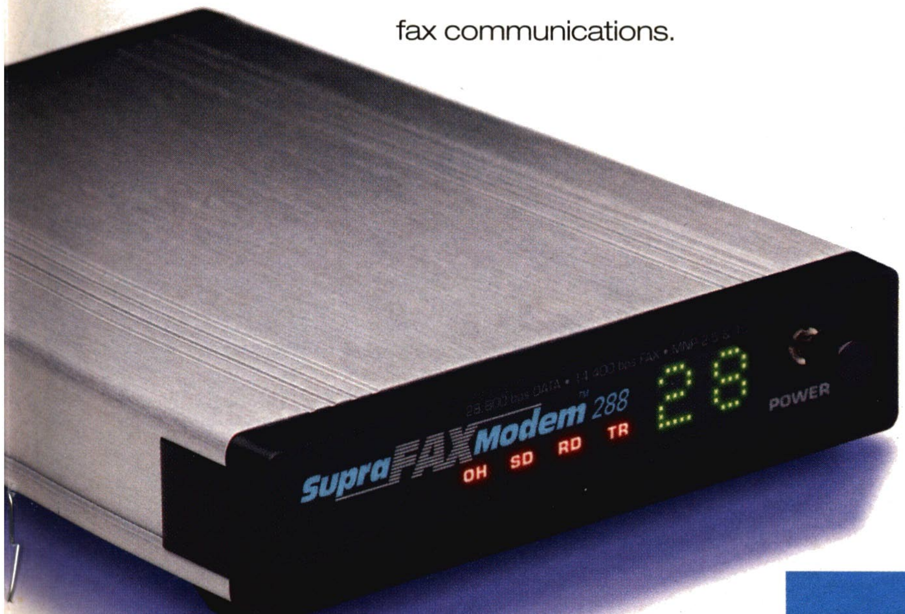
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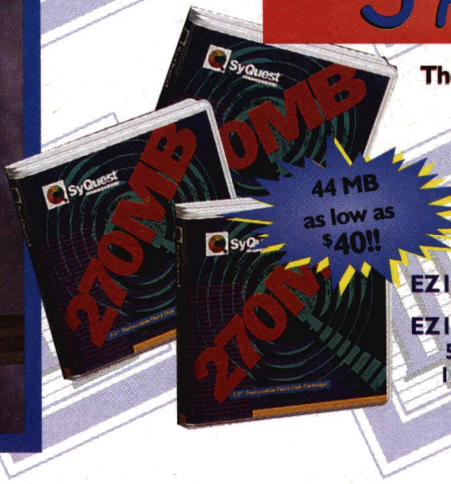
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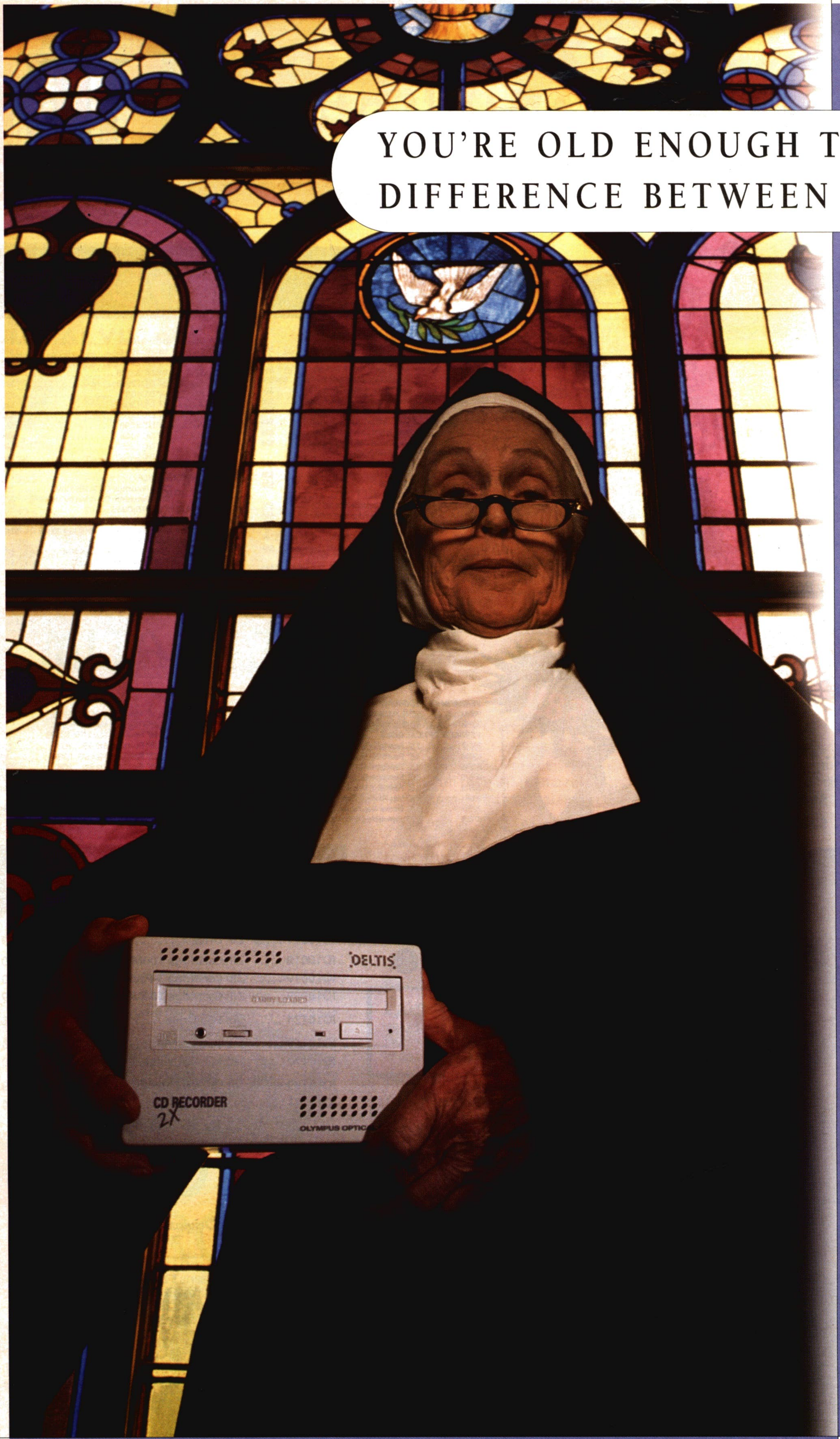

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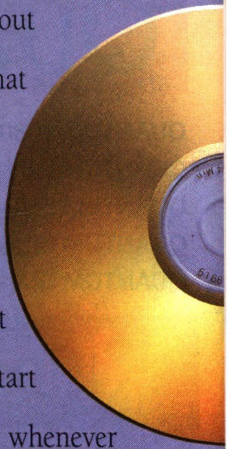

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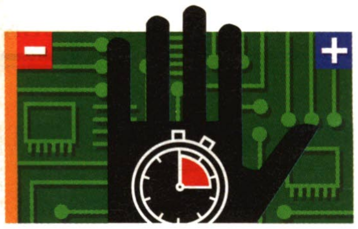


REVIEWS

CITIZEN BEN

See After Effects 3 and Final Effects in action: Three movies accompany our review at http://www.zdnet.com/~macweek/.

After Effects 3.0 now a powerhouse for video editing

By Ben Long

Adobe After Effects, a video-editing program optimized for creating movies and animations with superimposed moving elements, has long been in a class by itself. With Version 3.0, the program has left the class altogether and is running for the board of education.

Adobe Systems Inc. has packed the upgrade with solid new features, such as sophisticated support for Adobe Illustrator and Photoshop formats and powerful controls for defining motion. To make the program appealing to more users, Adobe has split After Effects 3 into two levels. A $995 retail version offers everything you need to create video for final output to film or for viewing on-screen. A hardware-protected $1,995 Production Bundle supplies additional power for high-end use (see story, Page 84).

Adobe adds support for Photoshop and Illustrator files, new motion-control tools.

Mixed neighborhood

You construct movies in After Effects by creating compositions. These can contain imported QuickTime movies, audio files, still images and even other compositions. These elements are imported into a Project window where you can preview and trim or crop them. A new Folder feature lets you group elements by composition or category — a nice aid for organizing your project.

After Effects 3's strong integration with Photoshop and Illustrator is more than just a way of getting images from one program to another. Photoshop has great layering controls with excellent masking and transfer-mode features. If you're importing Photoshop 3.0 files, you can import each Photoshop layer as a separate element and animate each layer independently. If you import vector-based Illustrator files, they can be accurately scaled and rotated with no loss of resolution or detail. Preserving these functions in After Effects means you can use the strengths of both programs.

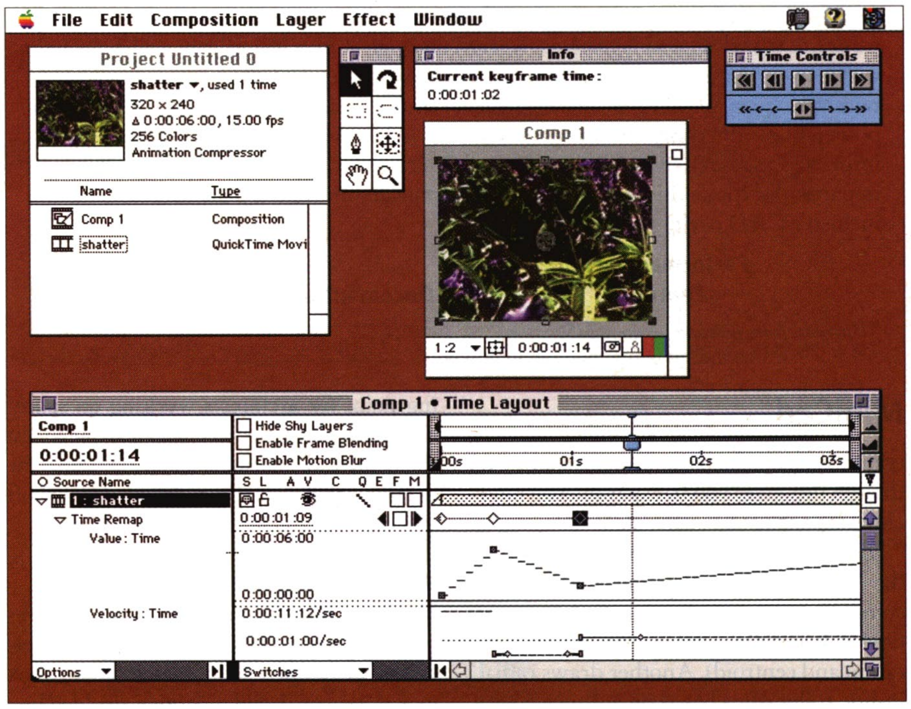
Animation

You animate a composition's elements in the Time Layout window, a time-line interface that lets you place key frames at particular points. Every property of an element — position, scale, opacity and rotation — can change over time and can be tweened.

Some tweaks to the Time Layout window have made the interface a little cleaner. For instance, you now create keyframes by clicking a small stopwatch icon next to an element's property, and controls for selecting the keyframe type have been moved from the Time Layout window to the menu bar.

Several major additions further enhance the program. A new Time Remapping feature lets you control the speed and direction of time within a movie. You can set keyframes for the new Time property to speed up, slow down or reverse a movie's time. In addition to creating wacky effects, such as having part of a movie play forward

See After Effects, Page 82



shatter, used 1 time
320 x 240
Δ 0:00:06:00, 15.00 fps
256 Colors
Animation Compressor

Comp 1 Composition
shatter QuickTime Movi

Current keyframe time:
0:00:01:02

1:2 0:00:01:14

Comp 1
0:00:01:14
☐ Hide Shy Layers
☐ Enable Frame Blending
☐ Enable Motion Blur
00s 01s 02s 03s
1 : shatter
Time Remap 0:00:01:09
Value : Time 0:00:06:00
0:00:00:00
Velocity : Time 0:00:11:12/sec
0:00:01:00/sec

The new Time Remapping feature in Adobe After Effects 3.0 lets you control the speed and direction of time within a movie. This feature has both creative and practical applications, allowing you to produce interesting video effects as well as correct out-of-sync animations or movies.

score card

After Effects 3.0

Adobe Systems Inc.
List price: $995*
Overall value ◆◆◆◆◆

With Version 3, Adobe has successfully turned After Effects into a must-have video-editing program for industrial video and multimedia production. The upgrade consists of subtle changes to the program's existing features as well as many entirely new features, including extensive support for Adobe Photoshop and Illustrator files, new controls that allow you to define time independently of motion, multiple effects per layer, and better support for high-end video output. And with its new pricing structure, After Effects' power should be accessible to many more users.

Performance ◆◆◆◆◆
Features ◆◆◆◆◆
Ease of use ◆◆◆◆◆
Documentation/support ◆◆◆◆

**Retail version; Production Bundle, $1,995. Upgrades to Production Bundle free for users who purchased After Effects 2.0 on or after July 8, 1995; $99 for other Version 2 users. Version 1 users can upgrade to the retail version for $195 or to the Production Bundle for $595.*

Key ◆◆◆◆◆ *Excellent* ◆◆◆◆ *Very good* ◆◆◆ *Good* ◆◆ *Fair* ◆ *Unsatisfactory*

Graphsoft MiniCad 6.0 piles on the Toolkits

By Timothy E. Johnson

Version 6.0 of Graphsoft Inc.'s versatile MiniCad expands on the idea the company tentatively introduced in its previous version — load up on industry-specific CAD drawing aids — but this time Graphsoft has done it with a vengeance. As in Version 5.0, the $795 MiniCad 6 comes with a number of specialized engineering, architectural and design drawing aids, called Toolkits, but now you'll find more truly useful parametric commands among the slew of symbols, hatches and tools. Other new features in MiniCad 6 let you access the library and other resources over a network at improved speeds.

You'll need more than 30 Mbytes of hard disk space to hold the application, and nearly 20 Mbytes of that represents the Toolkit components. However, Graphsoft has put all this information onto a CD-ROM to conserve your diminishing disk space.

Industry-specific add-ons make this a truly professional CAD package.

Nuts and bolts

The Mechanical Engineering Toolkit is the most interesting because it contains the best parametrics. The commands draw 2-D nuts, bolts, screws, taps, ball and roller bearings, pins, coil springs, and spur gears as seen from top and side views. You choose fasteners via a pop-up menu, where you select a standard size and type. You can change the other parameters, such as the threads per inch on your No. 6 bolt, only by using a text

See MiniCad, next page

score card

MiniCad 6.0

Graphsoft Inc.
Overall value ♦♦♦♦ **List price: $795***

MiniCad 6's new design and drafting Toolkits, which embed industry-specific symbols, hatches and commands, mark the program's first move into professional engineering. Most of the commands draw parametrically variable 2-D machine parts, but some are true design aids, such as the cam designer. Other significant additions help you manage these numerous resources. The new Resource palette, which lets you import selected symbols or worksheets from remote files, will become MiniCad's most powerful productivity aid for team design — as soon as its limited Find function is improved to search over whole volumes. Overall, the new features and the Toolkits in particular make this highly integrated, accurate program a truly professional and inclusive CAD package.

Performance ♦♦♦
Features ♦♦♦♦
Ease of use ♦♦♦
Documentation/support ♦♦♦♦

* *Upgrades from previous versions, $150.*

MiniCad

From previous page

editor on the corresponding macro. Although this gives you true parametric modeling, it's not all that convenient.

There are other important commands in the Mechanical Engineering Toolkit. One computes a shape's 2-D engineering properties (such as moment of inertia, radius of gyration and centroid). Another draws radial, in-line roller cams based on a displacement curve and acceleration choices you supply.

The new Geometric Dimensioning and Tolerancing command gives you even greater control over formatting. For example, you can choose one of four ways to place both nonmetric and metric units as dual dimensions. As a final flourish, the Mechanical Engineering Toolkit automatically sets up MiniCad's database to generate Bill of Material and Part Number worksheets. Graphsoft said the other Toolkits will eventually be as complete as this one.

> The Mechanical Engineering Toolkit has the best parametrics of the bunch.

There are a few equally useful commands in the other Toolkits. The Civil Engineering Toolkit has a parametric command for drawing structural shapes and one for modeling terrains based on a matrix of survey points or drawn contour lines. (MiniCad represents a terrain as a surface of interlocked triangles.) The command also calculates cut and fill quantities.

The Architecture Toolkit is the only library that accompanies its 2-D symbols, such as doors and windows, with 3-D versions. The Toolkit contains a new command for making code-compliant 2-D and 3-D straight or L-run stairs and landings based on floor-to-floor heights and a nominal riser height. It only does the basics, though — no railings, winders or overhanging treads here.

The Design Toolkit has a section on space planning and another on theatrical lighting schematics. The Space Planner uses the room area and adjacency information you type into a ready-made worksheet to size and arrange squares in a drawing. The program draws only one alternative room arrangement, but it could be useful as a starting point for architects working on space-allocation problems. We were unable to test the theatrical lighting segment because the documentation was so obtuse. Graphsoft said new documentation is on the way.

Starsky and hatch

Many of MiniCad's other new features manage the drafting symbols and hatches.

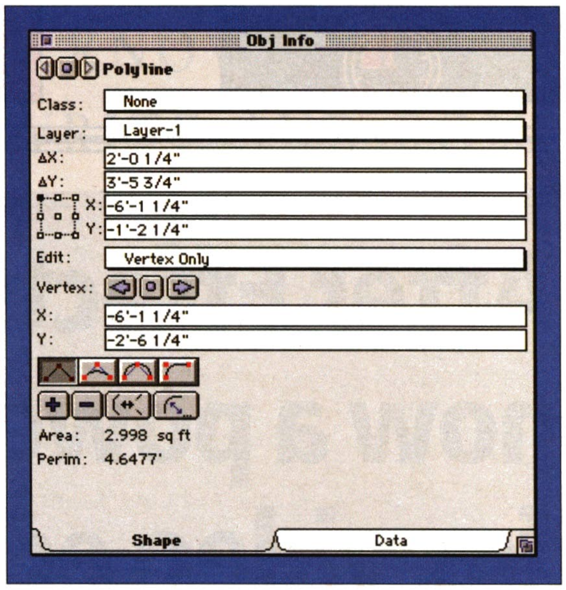
The revamped Edit Hatch dialog box makes it easy to build repetitive, gridded line patterns that behave like high-resolution fills, but the dialog box only lets you arrange lines. You can control the line spacing, rotation and dashing, and a layer's position with either the mouse or keyboard. This indirect approach works fine for most hatching conventions, but it's almost impossible to design irregular patterns, such as collections of triangles or circles, because you can't draw in the dialog box. Fortunately, Graphsoft has done the work for you: The hatching library includes almost every imaginable pattern.

Although MiniCad will flood a shape with a hatch, changing the shape's boundaries does not automatically cause the associated hatch to refill. You'll have to delete the gapping pattern and reapply the hatch.

The quickest way to access your symbols, hatches and other MiniCad resources, such as worksheets, databases and macros, is through the new Resource palette. MiniCad 5 forced you to load an entire drawing to access individual resources (see MacWEEK, July 18, 1994, Page 31). The Resource palette overcomes this slowdown by grabbing just the targeted resource, even if it's remotely located on a server. The palette's Find feature, however, needs beefing up: Not only must you first identify the enclosing folder, but you must also supply the entire resource name because MiniCad doesn't recognize truncated names. What's needed is a command that would look inside all MiniCad files for the named resource — similar to the Finder's Find File command.

The new Object Info palette expands upon the program's data display bar. It conveniently brings together almost everything you need to know about an object for keyboard editing, including any associated data records. The nine-point matrix in the middle of the palette lets you designate an object's corners, edge midpoints or center for editing. Clicking on a matrix position fills the adjacent text edit boxes with the corresponding point's coordinates. You can also edit vertexes and spline control points.

Despite all these innovations, the palette lacks a scaling control and, for some items, a way to edit an object's rotational position. You'll have to use the separate Scale and Rotate commands. Amazingly, you still can't scale an instance of a symbol with any command. MiniCad only lets you rotate and shift your symbols.



Class: None
Layer: Layer-1
ΔX: 2'-0 1/4"
ΔY: 3'-5 3/4"
X: -6'-1 1/4"
Y: -1'-2 1/4"
Edit: Vertex Only
Vertex:
X: -6'-1 1/4"
Y: -2'-6 1/4"
Area: 2.998 sq ft
Perim: 4.6477'

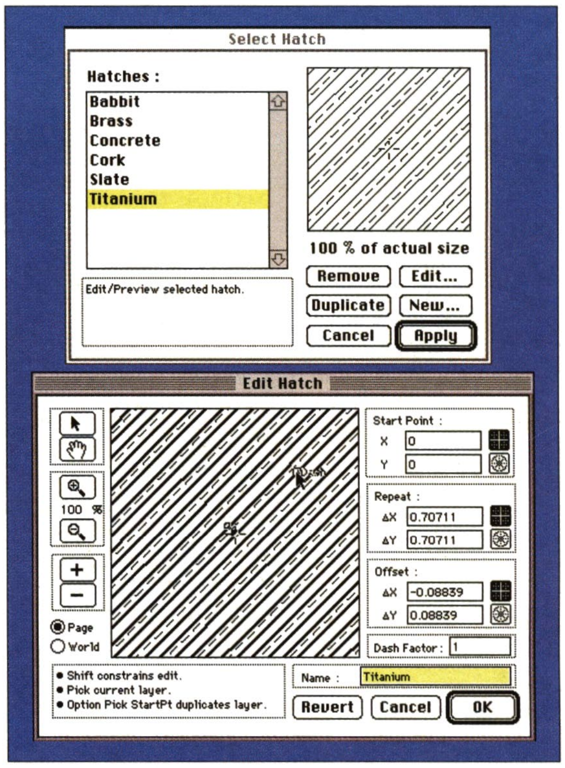
The new Object Info palette in Graphsoft's MiniCad 6 offers a convenient method of editing an object's geometry.

So what else is new?

A few of the new features go beyond the Toolkits. The Eyedropper tool picks up an object's graphical attributes and data records and transfers a selected subset to the next object that you click on. You can finally edit arrowhead lengths and angles and MiniCad's 256-color palette. The only change to the 3-D section is the new 3-D Working Plane palette, which you use to select or delete working planes (the plane your mouse rolls on when drawing in a 3-D window). Any plane you define as a working plane appears in the palette's scrolling list.

Graphsoft has responded to the introduction of Apple's QuickDraw 3D by adding 3DMF (3-D metafile format) to MiniCad's export menu. The menu already nicely supports DXF (Drawing Interchange File), EPS, QuickTime, RenderMan and spreadsheet exchange. The DXF import/export feature works flawlessly.

The rest of MiniCad's integrated features — database, worksheets, Pascal programming language and 3-D section — remain essentially unchanged.



Hatches:
Babbit
Brass
Concrete
Cork
Slate
Titanium
100 % of actual size
Edit/Preview selected hatch.

● Page
○ World
Start Point: X 0 Y 0
Repeat: ΔX 0.70711 ΔY 0.70711
Offset: ΔX -0.08839 ΔY 0.08839
Dash Factor: 1
- Shift constrains edit.
- Pick current layer.
- Option Pick StartPt duplicates layer.

Name: Titanium

You can change a line pattern's spacing, rotation and dashing in the Edit Hatch dialog box by dragging the corresponding circular target or by numerically editing the boxes at right.

MiniCad 6 requires at least a 68040 Mac and runs native on Power Macs. The documentation comprises a training CD-ROM, an expanded tutorial segment and a new manual on the Toolkits, including a reference list of every symbol and hatch. The indexes are still too sparse, though. The CD, which demonstrates every command and tool with a QuickTime movie, is extremely well done and makes up for the other shortcomings.

Conclusions

With its exhaustive symbol and hatch libraries and numerous design and drawing aids, MiniCad 6 marks the program's serious move into engineering. The Mechanical and Civil Engineering Toolkits offer full parametric control over a part's 2-D detailing. However, some parameters are difficult to change, since you must use a separate text editor to modify the underlying macros. We found the architectural parametric commands need more work to bring them up to the quality of the engineering offerings.

The new Resource and Object Info palettes help you quickly retrieve and edit graphical attributes and record-based data. The Resource palette is especially helpful because it lets you import selected symbols or worksheets from remote files without waiting for the whole drawing to transfer. Once its limited Find function is improved, it will become MiniCad's most powerful productivity aid for team design.

While you can count the other improvements on one hand, the industry-specific add-ons make MiniCad 6 a truly professional and inclusive CAD package.

Graphsoft Inc. of Columbia, Md., is at (410) 290-5114 or (800) 413-0936; fax (410) 290-8050; marketing@graphsoft.com. □

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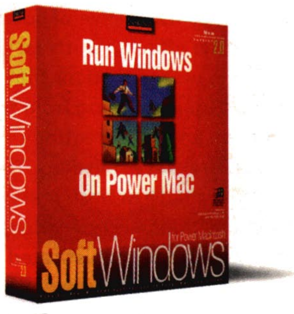

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After Effects

From Page 79

and backward, this feature lets you synchronize imported movies or animations whose times are a little — or a lot — out of sync.

All composition elements contain a mask, which works like a cropping tool, letting you define the parts of an image that will be cropped out. For example, you could build a circular mask around a movie of a falling ball to crop out the background. Along with rectangles and ovals, After Effects 3 can now create Bezier masks. Like any other property, they can be animated to create complex traveling mattes, but unfortunately, you cannot create noncontiguous masks.

As in Version 2, After Effects ships with a standard set of filters, including blurs, sharpens, 3-D transitions and color modifications (see MacWEEK, April 11, 1994, Page 55). Version 3, however, lets you apply more than one effect to any layer. If you wanted to do this in previous versions, you had to apply the first effect and then use the Compify command to render it before you could apply another. Now, you can stack up as many effects as you want on a layer. Each effect can be animated, and applied effects can be reordered. The multiple effects alone will make this upgrade valuable to some users.

Users looking to create high-end visual effects should check out MetaTools Inc.'s KPT Final Effects (see story below).

Legal render

After Effects provides a real-time preview that displays your animation as bounding boxes. With Version 3, you can also generate a real-time Alpha Outline preview for any layers that contain alpha channels. This preview can also be played with audio.

Audio is still After Effects' weak point. You can preview motion with audio and you can set volume levels, but that's it. We'd at least like to see a better facility for previewing audio. Presently, it's very difficult to precisely synchronize audio with visual events. When previewing, there's no visual indication of the current position in time, nor is it possible to stop the preview to make an edit. Consequently, determining the position of a particular sound in a movie is guesswork.

After Effects 3's new Render Queue lets you line up any number of compositions for unattended rendering. Each entry in the queue can have different settings, and you can reorder or deactivate any entry at any time. This makes it possible to simultaneously render multiple versions of the same composition. For example, you could set the Render Queue to render both a QuickTime movie and a high-resolution D-1 file in a single session.

Big video

Several new features have been added for high-end users who will be rendering for output to film or tape. After Effects now provides support for both D-1 formats, vertical and horizontal. Film users will be happy with the new 3:2 Pulldown Removal command, which automatically compensates for the change in frame rate from 24 to 29.97 frames per second.

The program's Frame Blending and De-Interlacing features have both been improved. The De-Interlacing capability now analyzes frames to affect only the portions

See After Effects, Page 84

KPT Final Effects 3.0

Overall value ♦♦♦♦

You don't have to look beyond Adobe After Effects 3.0 for your garden-variety special effects, such as 3-D rotations, blurs and distortions. But if you want to produce high-end visual effects, spend the extra $695 for MetaTools Inc.'s KPT Final Effects, a set of 28 plug-ins designed specifically for use with After Effects 3.

KPT Final Effects offers video tools not previously available on the Macintosh. In addition to a wide range of distortion, transition and stylistic plug-ins, the package contains several powerful particle effects, which are high-end video functions that can be used for everything from shattering an image to creating smoke, fire and explosions. These are more than just flashy filters and transitions — knowledgeable users can create sophisticated effects both real and surreal.

KPT Final Effects spreads its filters among several submenus off the Effects menu in After Effects. Like other After Effects filters, you can set and modify the parameters for all Final Effects plug-ins through the Effects dialog box or by defining keyframes within the Time Layout window. Getting the hang of the Final Effects filters is pretty easy, since they use the same slider-laden interface as After Effects' built-in effects. And, like other After Effects 3 filters, any number of effects can be stacked up on a single video layer.

Final Effects' seven distorting filters nicely fill in some gaps in After Effects' set of distortion effects. For creating black hole-like vortexes, the Flo Motion filter allows you to make any layer look as if it's being sucked into or spit out of a central point.

It slices! It dices!

The Griddler slices and dices a layer into tiles with options for scaling and rotating individual squares, while Lens creates lens-distortion effects as if your movie were being viewed through a convex or concave lens.

Two slant filters allow you to shear a layer along its horizontal axis. The basic Slant provides controls for the amount of slant and height of the layer; Slant Matte adds a drop shadow.

For video-wall effects, the Tiler will scale down an image and tile it over the entire screen. Finally, Color Offset lets you rotate the value of each color channel, producing psychedelic color effects.

Final Effects' two extra Image Control filters can create alpha-channel masks. Unlike After Effects' built-in controls for creating key, these filters actually add an alpha channel to existing footage. The Threshold filter uses either RGB or Luminance information from the selected layer to create a mask, while Threshold RGB lets you create masks based on individual red, green or blue color channels.

Sh-sh-sh-shattered

Final Effects provides a full complement of particle generators with capabilities far beyond anything else available on the Mac platform.

Ball Action transforms an image into spheres that can, in turn, be rotated, scattered and twisted. As with all Final Effects filters, these properties can be animated, making it possible to have a swirling cloud of balls resolve itself into an image.

Bubble allows you to create a screenful of bubbles, which can be animated in any layer. Pixel Polly shatters your image into 3-D rotating shards that fall to the bottom of the screen.

If the weather isn't cooperating with your next shoot, you can use the Rain and Snow filters to create precipitation in front of any layer.

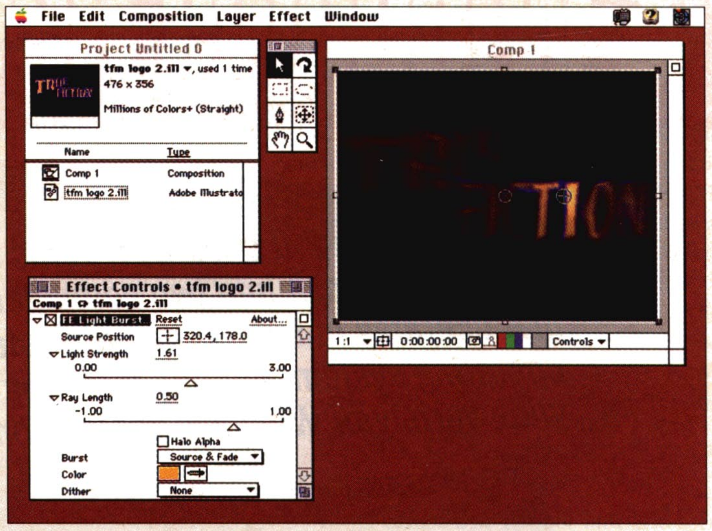
Finally, three particle generation systems are provided for creating fire, smoke or explosion effects. Particle Systems lets you specify an origin out of which particles will spew in one of several predefined patterns, such as Explosion, Fountain or Bonfire. Particle System II provides further controls, including an origin that can be animated and finer controls for the size of the particle field.

All particle generators provide control over the size, number, color and shape of the generated particles. Each filter also automatically creates an alpha channel for compositing particle effects with other layers.

Unfortunately, it's a bit difficult to manage and predict the direction and size controls, but After Effects 3 is fast enough that you can quickly see a frame rendered and make any necessary adjustments.

Stylin' transitions

Four effects are provided for creating "stylized" effects upon a layer. Kaleida allows you to create moving, kaleidoscope effects that can be animated; Scatterize will strew an image's pixels across the screen in a cloud of dust.



tfm logo 2.ill, used 1 time
476 x 356
Millions of Colors+ (Straight)

Source Position 320.4, 178.0
Light Strength 1.61 (0.00–3.00)
Ray Length 0.50 (-1.00–1.00)
☐ Halo Alpha
Burst: Source & Fade
Dither: None

The Lightburst filter in MetaTools' KPT Final Effects 3 allows you to make any layer appear to radiate light from a single, movable point.

Users of MetaTools' Kai's Power Tools will recognize the Page Turn filter, a somewhat tacky effect that makes one layer peel off another, much like a page in a book.

Final Effects also supplements After Effects' existing Transition menu with four plug-ins for segueing from one movie to another. Image Wipe provides a luminance-based directional wipe transition; Scale and Radial Scale fold or stretch an image on or off the screen. Finally, Twister curves one layer around to reveal another layer on its backside.

Three other, hard-to-categorize filters are provided. The most notable is Lightburst, which makes an image appear to shoot out or softly radiate light.

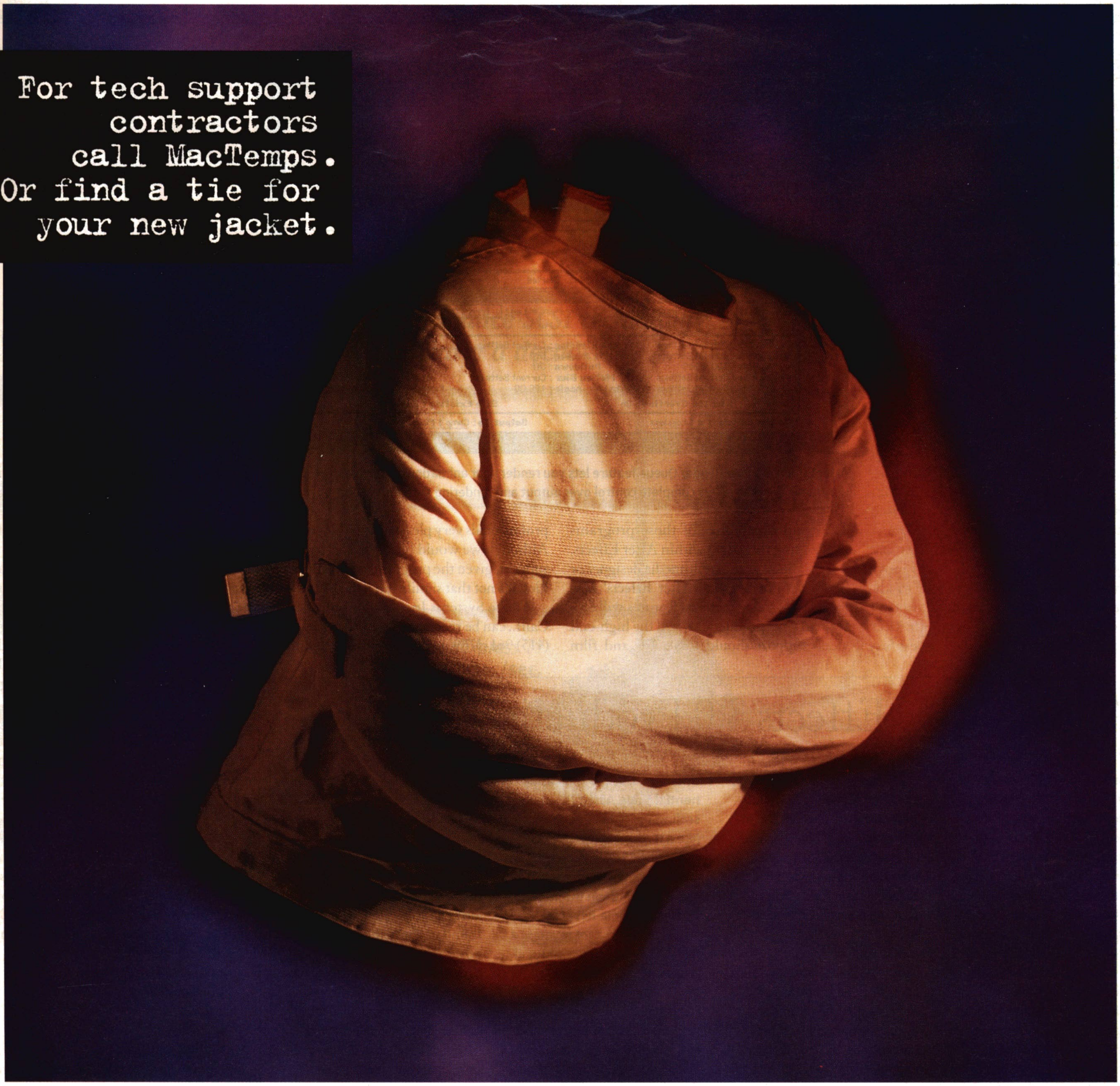
Users who have experimented with similar effects on other platforms will probably feel right at home with KPT Final Effects, but novices might be a little frustrated at the untapped power they can feel looming within this software. Some of this power is hinted at with the sample project included on the package's sole floppy, but it's not enough. At this price, and supporting an application of this complexity, we'd like to see a more thorough manual with extensive tutorials and, ideally, a CD-ROM with sample movies and components.

Conclusions

KPT Final Effects is an impressive collection of plug-ins that augments an already powerful video tool. Not only has MetaTools offered effects previously unavailable in Mac video software, but it has also packaged them in an elegantly simple, easy-to-use product. Although we'd like to see more in-depth documentation, both novice and professional users will find much satisfaction in this collection.

MetaTools Inc. of Carpinteria, Calif., can be reached at (805) 566-6200; fax (805) 566-6385; metasales@aol.com; http://www.metatools.com.

— By Ben Long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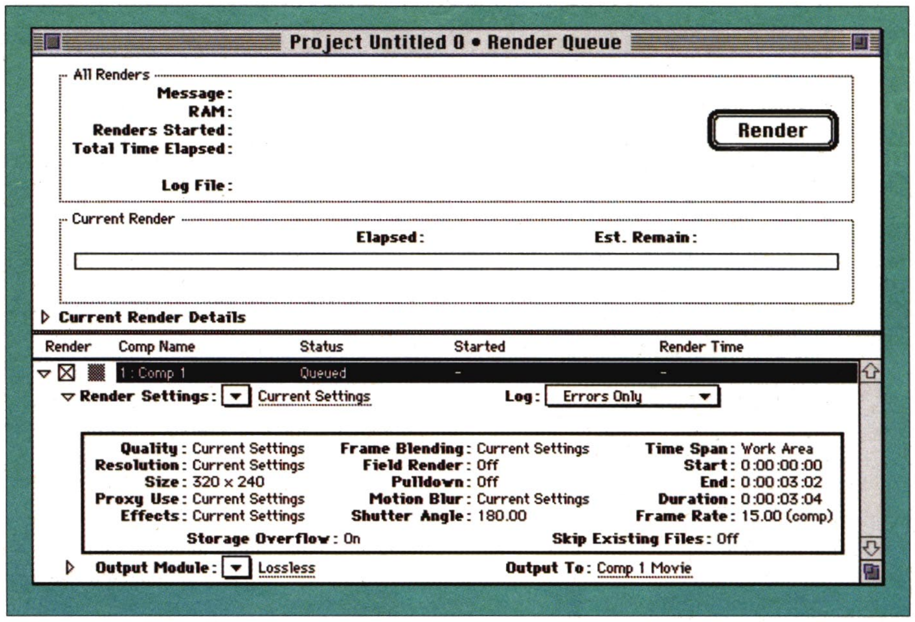
After Effects

From Page 82

that are moving, while the Frame Blending feature interpolates over a range of frames to produce more accurate results.

After Effects' performance has also been greatly improved. Not only are final rendering times at least twice as fast as in Version 2, but we also found the program to be twice as fast at displaying a frame while editing.

Although the documentation is very good, we'd like to see more tutorial information, particularly for using and editing keyframes. Fortunately, Adobe said it plans to make After Effects the next subject of its Classroom in a Book series; these workbooks retail for about $50, but they're worth it.



Project Untitled 0 • Render Queue

All Renders
Message:
RAM:
Renders Started:
Total Time Elapsed:
Log File:

Current Render
Elapsed:
Est. Remain:

Current Render Details

Render	Comp Name	Status	Started	Render Time
☒	1 : Comp 1	Queued	-	-

Render Settings: Current Settings
Log: Errors Only

Quality: Current Settings
Resolution: Current Settings
Size: 320 x 240
Proxy Use: Current Settings
Effects: Current Settings
Frame Blending: Current Settings
Field Render: Off
Pulldown: Off
Motion Blur: Current Settings
Shutter Angle: 180.00
Time Span: Work Area
Start: 0:00:00:00
End: 0:00:03:02
Duration: 0:00:03:04
Frame Rate: 15.00 (comp)
Storage Overflow: On
Skip Existing Files: Off

Output Module: Lossless
Output To: Comp 1 Movie

After Effects 3's new Render Queue feature lets you render your animations in batches. The Render Queue window offers complete control over output and rendering settings via pop-up menus.

Conclusions

Offering an abundance of new controls and a lower price, Adobe has turned After Effects 3 into a must-have product for industrial video users and multimedia authors. The company understands that multimedia and video work require more than just good authoring and editing tools: They also require the capability to move disparate media from one source to another. Adobe's intelligent integration of Photoshop and Illustrator data into After Effects allows you to preserve the best features and capabilities of those programs while using their data within After Effects.

Whether you're a multimedia designer or broadcast professional, After Effects' new motion control and effects features will be a boon to your productions, and the high-end video support should leave TV and film professionals very pleased with their output. Although we would like to see better audio support, given the program's stellar capabilities, it's not that significant a flaw.

Adobe Systems Inc. of Mountain View, Calif., can be reached at (415) 961-4400; fax (415) 961-3769; http://www.adobe.com/. ☐

Adobe After Effects 3.0 Production Bundle

The $1,995 Adobe After Effects 3.0 Production Bundle from Adobe Systems Inc. consists of a number of plug-ins offering extra functions in four categories: motion control, keying, distortion and device control.

As part of After Effects 3's new plug-in specification, filters can now create and modify existing keyframes in a time line. These plug-ins, called Keyframe Assistants, appear in their own submenu beneath the Layer menu. The Motion Pack is a complete set of Keyframe Assistants that help you assign keyframes. The term "Motion Pack" can be misleading, though: Some of these assistants can be used to define more than just motion; they can define opacity, rotation, scale or any other editable property.

The Motion Tracking Assistant lets you track part of an image in a movie and use that tracking information to create a motion path for another element. For example, if you've got a movie of a person waving a magic wand, the Motion Tracking Assistant can automatically track the head of the wand and apply that position and motion information to an animation of a sparkle.

Using the same technology, the Image Stabilization Assistant does a competent job of correcting for a bouncy camera.

The Motion Math Assistant, which provides an equation-based system for designating motion, is particularly stunning. Using layers and layer properties as variables, Motion Math lets you specify complex conditional equations for defining a layer's motion.

Just as their names imply, Smoother and The Wiggler will automatically adjust a property's keyframes in a smooth or random fashion.

Easy Ease lets you automatically create ease-in and ease-out moves, while the Exponential Scale Assistant makes scaling operations look more like a natural zoom effect.

Motion Sketch allows you to create a motion path by simply drawing a path on the screen. Finally, the Time-Reverse Keyframes Assistant reverses a range of keyframes without altering any other parameters.

Keying Kops

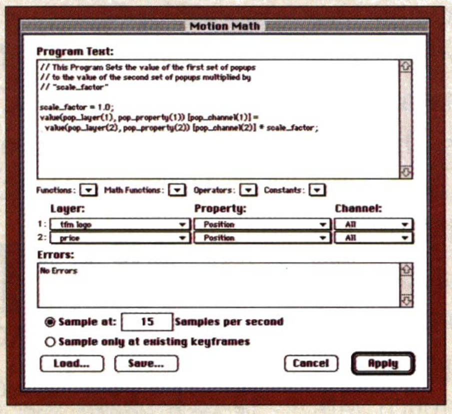
Adding to After Effects' built-in keying controls, the Keying Pack gives you several additional algorithms for keying one image over another.

Mattes and key can be created using the Linear Color Key, Extract, Difference Matte, Color Difference Key or Color Range plug-ins. Each uses a different method for creating a matte. Particularly impressive is the Difference Key, which does an excellent job of creating key for images with transparent objects such as glass or smoke.

The Simple Choker, Matte Choker, Alpha Levels and Spill Supressor let you touch up or change mattes created in After Effects or other programs.

If you're still hungry for effects, the Distortion Pack provides plug-ins similar to those found in Photoshop. Like other After Effects plug-ins, though, these filters are all dynamic. Scatter, Twirl, Ripple, Glow, Bulge, Wave Warp, Corner Pin, Polar Coordinates and Displacement Map all use the same interface controls as After Effects' other plug-ins.

Finally, those with a device-controllable film or video recorder can use the Device Control Pack to perform input and output operations to and from a variety of devices. Supported machines include Abekas Video Systems Inc.'s Diskus and Accom Inc.'s RTD.



Motion Math

Program Text:

```
// This Program Sets the value of the first set of popups
// to the value of the second set of popups multiplied by
// "scale_factor"

scale_factor = 1.0;
value(pop_layer(1), pop_property(1)) [pop_channel(1)] =
  value(pop_layer(2), pop_property(2)) [pop_channel(2)] * scale_factor;
```

	Layer:	Property:	Channel:
1:	tfm logo	Position	All
2:	price	Position	All

Errors:
No Errors

● Sample at: 15 Samples per second
○ Sample only at existing keyframes

The Motion Math Keyframe Assistant defines the movement of a layer through equations with conditional statements and variables.

Conclusions

The After Effects 3 Production Bundle adds a lot of value to an already amazing program. The Motion Tracker and Motion Math plug-ins are particularly stunning, as are the more sophisticated keying filters. For high-end users, the extra $1,000 spent is well worth it.

— By Ben Long

5300cs is sweet

Thanks for your honest review of the PowerBook 5300c (MacWEEK, Dec. 11, 1995, Page 37).

I have just recently purchased a 5300cs and have been very happy with it. My only disappointment thus far has been the lack of a clickable trackpad.

While I think you were unjustly critical in some ways and not critical enough in others, I applaud MacWEEK for not sugarcoating everything, as even you folks have started to do recently.

You give the 5300 a 2 out of 5 rating in performance; I think this is a disservice to your readers. Your article hints that the native performance is quite good, although emulation is lacking without Connectix Corp.'s Speed Doubler. Let's be honest here: If anyone cares significantly about emulation, they should buy Speed Doubler.

For compatibility you give it a 1 out of 5 rating. Hello? Is there any justification in the article other than the crashes, which you couldn't really explain, and the one TDK modem?

As for where you weren't critical enough, let's talk PC Cards. You mention some cards are power pigs — let's get some names! I'm tired of surfing the Web to find manufacturer specifications for PC Cards only to find they're "low power." Duh!

Ken Hancock
Senior software engineer
VideoGuide Inc.
Bedford, Mass.

MacWEEK replies:

The performance rating refers to more than just speed; it includes how the product's features perform, and we felt many features were not implemented well.

Regarding emulation speed, unless Apple bundles Speed Doubler, we can't take it into account when rating the notebook.

As for compatibility, something that crashes regularly unless AppleTalk is off isn't a highly compatible product; the sidebar on Page 38 detailed our numerous problems.

No PB problems here

I was surprised by your review of the PowerBook 5300c. I bought a 5300cs 8/750 in September and have been very happy with it.

The benchmark chart was very biased, since it relied only on emulation. Nearly all of the software I use on my

See Forum, Page 86

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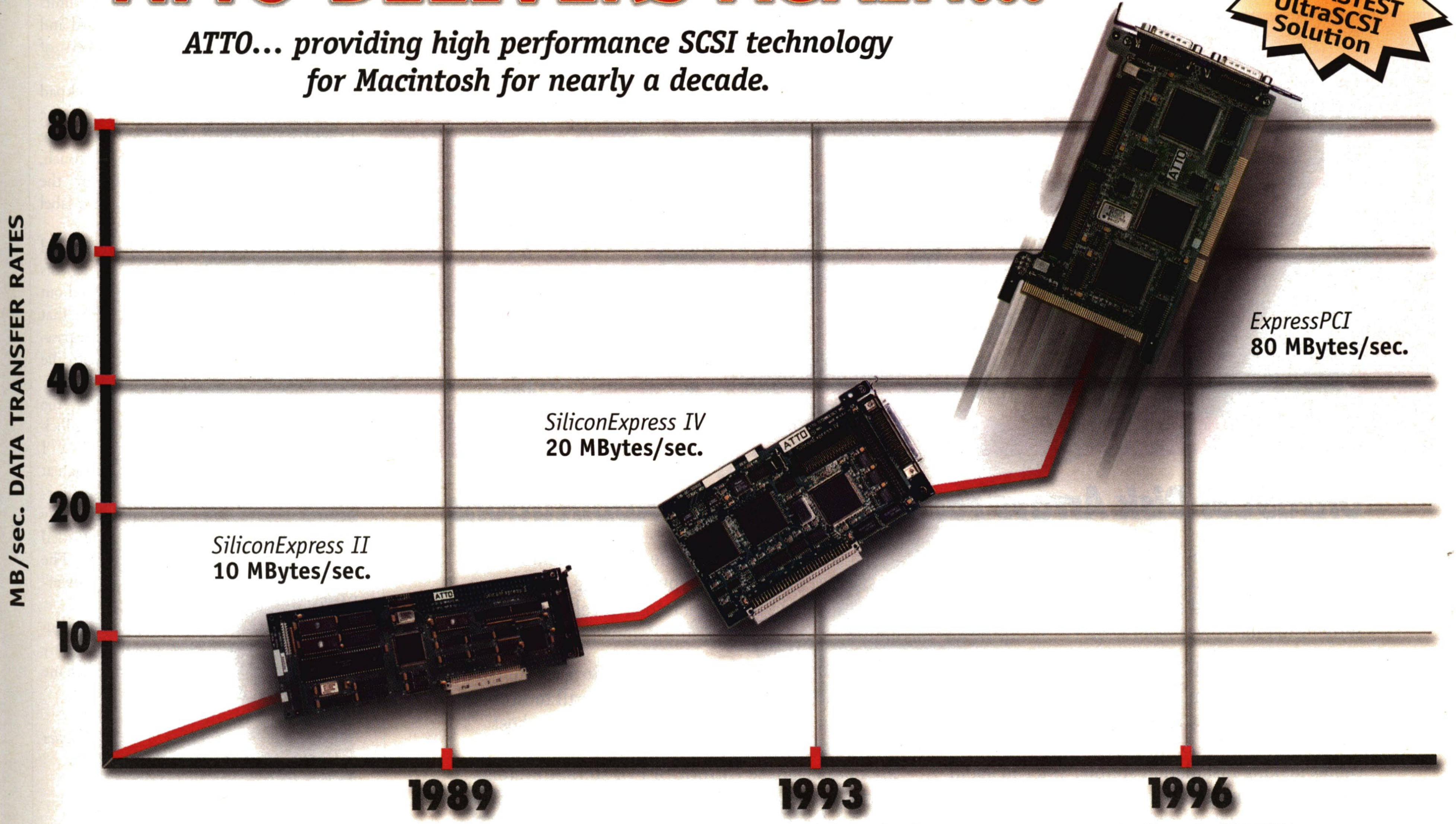

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Forum

From Page 84

5300 is Power Mac-native, and the 5300 flies — generally about the speed of a Power Mac 7100/80 and in some cases significantly faster than an 8100/100. As far as battery life, I routinely get three to four hours from my machine while using virtual memory and running Microsoft Word 6.0 with the Autosave feature spinning up the drive every 10 minutes.

I also had a large number of Type 1 and Type 11 errors. Since I had no trouble before installing some extra RAM, I checked the connector. By pressing harder, I got a nice snap as the card made firm contact, and my random crashes went away.

I had no trouble with my Global Village PowerPort Platinum Pro PC Card. The fax functions worked perfectly, and the gray scale is much better than that provided by Apple's package. The Ethernet seems comparable to the built-in Ethernet on an 8100. The Global Village card could be inserted in either slot with no configuration required.

The only real trouble I've had with the computer was when using Microsoft Office. With the Office 4.2x Update for Power Macintosh extension installed, I experienced random crashes with Word and Excel. Removing the extension removed the problems.

Randy Pollock
Senior development engineer
Loral Infrared and Imaging Systems
Lexington, Mass.

PowerBook mistake

I very much enjoyed your review of the PowerBook 5300c; I concur with most all you said.

I purchased three of these units (each with a Platinum Pro PC Card and 32 Mbytes of RAM) for members of my group.

Lockups are routine. The trackpad overheats and goes crazy. One of the PowerBooks is mislabeled on the screen hinge as a 5300cs. (Nice touch, Apple: Charging this much for the computer and then putting a Chevy label on the Lexus.)

Most frustrating was the Password Security feature. Two research scientists tried this little gem and were locked out of their 5300 machines. It was clear that this was not an issue of forgetting the password or making some mistake with the Caps Lock.

Apple told one researcher to take the computers to a local Apple rep to unlock it. "Huh," said the guy at CompUSA. "I have no idea what to do," said the man at Computer City. "Ship it back to California," said Apple. One guy intentionally erased his entire hard disk and reloaded his software to get around the lock. The other scientist has gone back to his PowerBook 540.

I'm disappointed with Apple, and I'm beginning to nod in agreement when my Intel-standard PC-using colleagues tell me I purchased a mistake.

Mark Hughes
Chief of Reproductive & Prenatal Genetics
National Center for Human
Genome Research
National Institutes of Health
Bethesda, Md.

Educated discontent

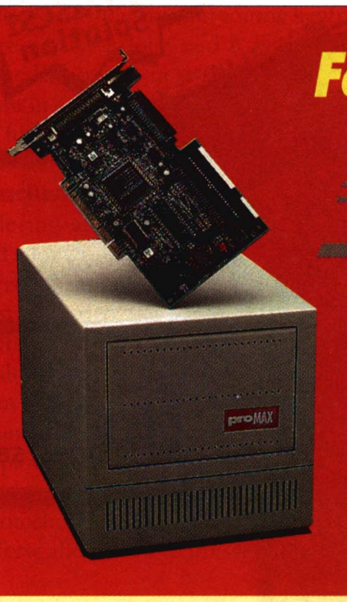
I couldn't agree more! The 5300 should be renamed the 53 — it's a terrible step back.

We have four of the 5300 series here at the College of Education. They feel cheap, look cheap, act cheap and cost as much as Solomon's throne.

We were particularly put out that there was no built-in Ethernet, no CD-ROM player, one cheap speaker — crummy. We've decided to just start upgrading our 500-series PowerBooks to PowerPC CPUs when we see an upgrade we like.

Justin Smith
System administrator
College of Education
Idaho State University
Pocatello, Idaho

Send your comments to MacWEEK Reviews Department, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3602; reviews@macweek.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.



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This new *Ultra*SCSI host adapter can double I/O data rates when combined with *Ultra*SCSI drives. And is backwardly compatible with existing SCSI-2 disk drives. *Ultra*SCSI connects using standard data cables making installation simple. You can avoid obsolescence by specifying Adaptec PowerDomain host adapters that are compatible with Fast/Wide SCSI-2 and *Ultra*SCSI hard disk drives.

At the core of this host adapter is the powerful Adaptec-designed PhaseEngine RISC processor. This processor minimizes time it takes to process SCSI commands allowing the CPU to perform other tasks improving overall performance. The PCI bus offers data rates to 133 MB/sec making these RISC based host adapters essential for top performance.

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Adaptec's management made a strong commitment to support the Macintosh by acquiring Trillium Research, a seasoned Macintosh developer group and publisher of industry noted Remus utility software.

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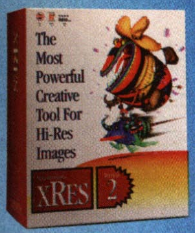

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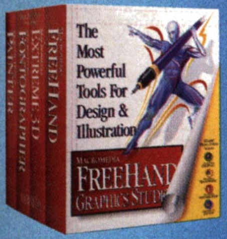

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PageMill Web-editing app powerful, but crash-prone

By Ric Ford

PageMill 1.0 is Adobe Systems Inc.'s official release of the hot Web-authoring program created by Ceneca Communications Inc. While the program lives up to its promise as an easy-to-use HTML editor, it could use some major improvements, and Adobe needs to clean up a few reliability problems.

Web tool is easy to use but lacks the robust qualities of other Adobe products.

The biggest change in PageMill since our Beta Test is simply its new ownership (see MacWEEK, Sept. 25, Page 22). The program's essential features and functions remain the same. In the meantime, Adobe dropped the price from $195 to $99, tweaked a few things, added a user manual and put the product on the market.

PageMill's great strength is its ease of use. Internet novices can quickly create Web pages from scratch, adding graphics and forms without learning HTML codes. Like using a Macintosh word processor, you can build Web pages by specifying choices with menus and tool bars. What you see in PageMill is basically what you get in a Web browser. HTML's arcane tags and codes are handled and hidden by PageMill.

While this will suffice for many users, PageMill is not a complete solution for advanced Web authoring. You'll need other programs to deal with the latest HTML flavors; construct tables; upload files; and integrate other services such as databases, financial transactions and conferencing. The program will undoubtedly grow, but PageMill works best for now as a first step in Web authoring.

Rough edges

For this review, we looked more closely at PageMill's reliability and the details of its operation.

Veteran Web hackers who are already accustomed to coding plain-text HTML in a text editor may find themselves wrestling with PageMill's preferences and limitations. After PageMill opens an existing HTML file, it rewrites the code structure according to its own rules before saving. You can still open the file with a text editor, but its contents will be different. The documentation advises making backup copies of your original files.

PageMill currently supports HTML 2.0 and selected Netscape Navigator 1 extensions (tastefully omitting the <blink> tag, among others). Neither HTML 3.0 nor Netscape 2.0 extensions are yet in its vocabulary, but PageMill does offer a Raw HTML text attribute for inserting custom HTML within its documents.

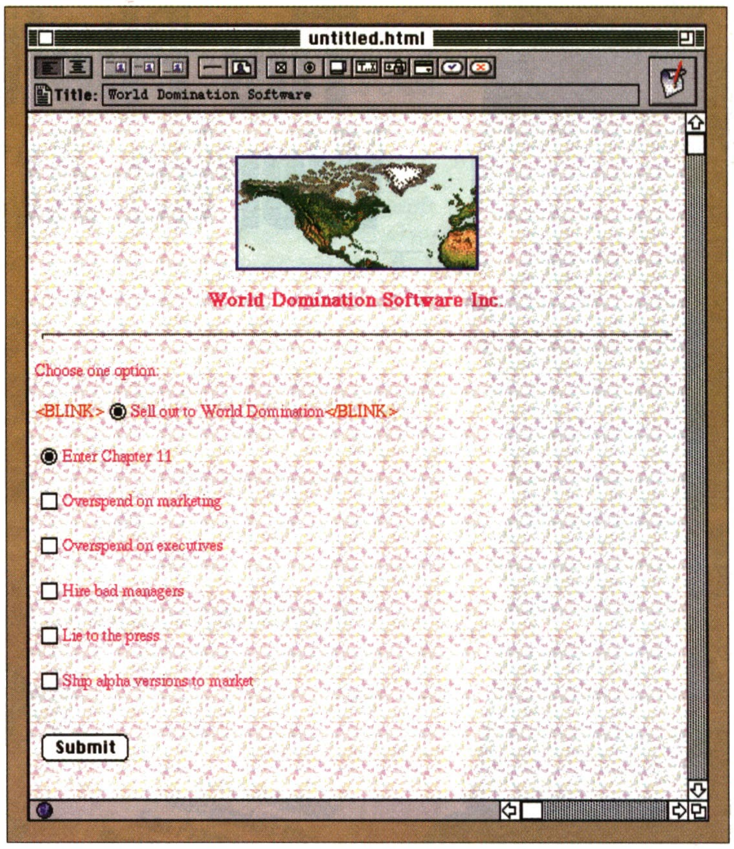
PageMill 1.0 lacks the capability to open RTF files or anything other than PICT, GIF and plain-text files. The shipping version supports placement of JPEG links on a Web page, but it neither opens nor displays JPEG images. PageMill 1.0 offers no support for HTML tables, and it accommodates only one form per file, not multiple forms.

Another continuing omission is the lack of a search-and-replace function. This gap, odd for an authoring program, will force people into using a text editor for some basic editing tasks.

Getting acquainted

PageMill is easy to use, but some of its features are not obvious without reference to the program's documentation.

The Attributes Inspector window, for example, lets you change the names of links and anchors in an editable text field but discards your changes unless you press Return or Enter to validate the field. This odd departure from the normal Mac interface could have been avoided by providing OK and Cancel buttons. (Another quirk of this field — support for drag-and-drop — makes it easy to jumble text accidentally.)



World Domination Software Inc.

Choose one option:

<BLINK> ● Sell out to World Domination</BLINK>

● Enter Chapter 11

☐ Overspend on marketing

☐ Overspend on executives

☐ Hire bad managers

☐ Lie to the press

☐ Ship alpha versions to market

Adobe PageMill brings point-and-click simplicity to Web-page creation. The only visible HTML code in PageMill's document windows is Raw HTML, which displays in red. Other tags are hidden from view, even in editing mode, shown here.

PageMill has no facilities for creating graphics but accepts graphics pasted from the Macintosh Clipboard; PageMill creates GIF files automatically. Alternatively, you can link your pages to existing files by dragging the files' icons onto the page from the Finder. PageMill's image window provides tools for setting interlacing and transparency in GIF files as well as for creating clickable image-map buttons.

Working with text imported from existing pages typically forces study of PageMill's underlying HTML processes, which are hidden from view. When PageMill opens a file, it immediately converts paragraph tags ("<P>") to break tags ("<BR>"), for example. This works better for Netscape, which ignores extra paragraph tags, but other browsers work the opposite way. A tech note lamely suggests using Adobe Acrobat files or transparent graphics as work-arounds.

PageMill also removes any extra space (tabs, returns and spaces) it finds in an HTML file. Browsers typically ignore this extra space, but the space can be very helpful when working within a text editor. A PageMill-processed file, with its tags packed together and white space stripped out, is more difficult to edit outside of PageMill. (Another confusing element is Naturalsizeflag, a special construction used only by PageMill; browsers should ignore it.)

PageMill's 61-page user manual is well-written and helpful. Other technical notes, available at http://www.adobe.com/support/, cover various tricks and issues not documented in the manual.

Performance

In our testing, PageMill 1.0's performance was mixed. A holdover of some bad code from the beta period was troublesome. We quickly experienced problems, also reported on-line by customers, in which PageMill caused an otherwise stable system to freeze upon quitting the application, forcing a restart. Adobe was still working on the problems when we completed the review and expected to deliver an update that may be available by the time you read this.

In other areas of performance, PageMill was fine. Speed was good on both a Quadra 650 and a Power Mac 7500. A short delay at start-up is caused by a network copy-protection routine. One of Adobe's technical notes describes a work-around for problems that can result from this scheme after a crash.

Less important, but still annoying, PageMill's installation process needs some refinement. The installer, for example, adds Macintosh Drag and Drop to the System folder, regardless of the presence of System 7.5, which supersedes the extension. Another library is installed unnecessarily on 680x0 models. Custom installation offers no control over these components.

Conclusions

Adobe's PageMill 1.0 retains all the power and ease of use of Ceneca's beta version, and these are strong advantages, particularly for new Web authors. Unfortunately, there is more work to do before the product is as robust as Adobe's leading applications.

For experienced Web authors, PageMill may be helpful within a larger suite of tools. There are important tasks that the program simply does not handle in this release, including tables and global changes, and its HTML preferences may not match yours.

Like the first release of Adobe PageMaker, PageMill 1.0 has a lot of room to grow. We can hope that Adobe nurtures PageMill well, keeping it free from high prices and feature bloat while continuing to improve its capabilities and reliability. This is clearly a first step.

Adobe Systems Inc. of Mountain View, Calif., can be reached at (415) 961-4400; fax (415) 961-3769; http://www.adobe.com/. ☐

score card

PageMill 1.0

Adobe Systems Inc.
List price: $99
Overall value ◆◆◆

PageMill is a Web-authoring tool that promises easy page creation without having to learn HTML. Under its new owner, Adobe, PageMill 1.0 offers better documentation and a better price than it did when Ceneca Communications Inc. was developing it, but it retains the character of its pre-release version. It also retains some bugs and quirks. The program's current limitations may bother experienced Web authors, although it can serve as part of a larger suite of tools. Despite its flaws, PageMill excels at building new Web pages quickly and easily, and a minor update should be enough to bring it to commercial-quality stability.

Performance ◆◆
Features ◆◆◆
Ease of use ◆◆◆◆
Documentation/support ◆◆◆

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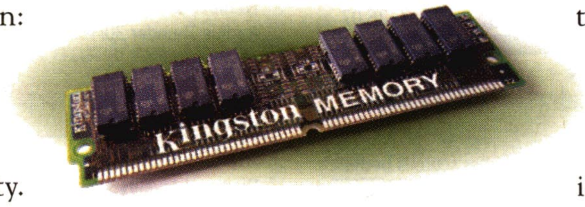

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MacBench 3.0 testing tool starts new numbers game

By Stephen Howard

New version improves accuracy and adds test sets for publishing systems.

This week MacWEEK, along with the other Ziff-Davis Publishing Co. magazines and newspapers, will release an updated version of its Mac performance-testing tool, MacBench. Version 3.0 includes a new category of tests designed for publishing systems, more-accurate general tests and other minor improvements.

Starting with this issue, MacBench 3 is the standard benchmark for processor, floating-point-unit, disk and graphics speed in MacWEEK reviews. And, as with previous releases, Version 3 will be distributed free via ZD Net forums on on-line services and will be available on CD-ROM for you to use.

Power Mac 6100/60 is a "10"

After running a test, MacBench 3 reports a Mac's speed as a relative score or as an absolute data transfer rate. The relative scores are used for summary results, such as the overall Processor score and Graphics Mix (formerly the Video Mix) score. Each release of MacBench has calibrated these scores to a new standard, which receives a rating of 10.

With Version 3, the new base-line score represents the speed of a Power Macintosh 6100/60 — the original Power Macintosh. For instance, if a display card receives a 15 in the MacBench 3 Graphics Mix, then the card is 50 percent faster than the built-in video of a Power Mac 6100/60. Previously, a score of 10 equaled the performance of a 68040-based Quadra 630.

The Power Mac 6100/60 used for comparison had 16 Mbytes of noninterleaved RAM, no Level 2 cache and a 250-Mbyte internal Quantum hard disk. The machine was running the full System 7.5.1 with virtual memory on, disk cache set to 96 Kbytes and AppleTalk turned off. The graphics base line for this machine is a 640-by-480-pixel screen set to eight-bit color running off built-in video.

To help orient readers to the new relative score, we've compiled MacBench results for the high-end Power Macs and most of the currently shipping PCI graphics and SCSI accelerator boards.

New publishing mixes

MacBench's basic scores represent the performance of the 12 best-selling Mac business applications, most of them Power Mac-native. The Disk Mix, for instance, reports how well word processors, spreadsheets, single-user databases and the like will run on a given hard disk.

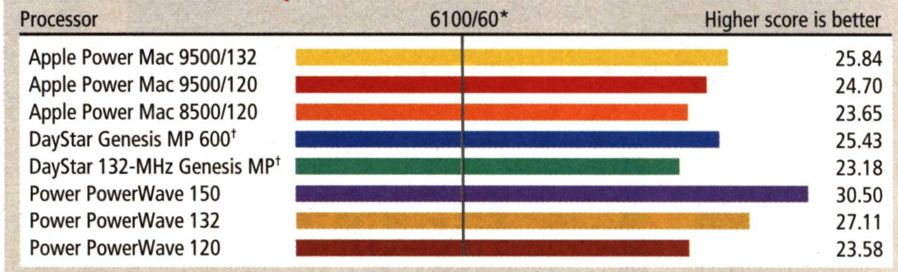
These basic scores are useful for evaluating general-purpose computer equipment, but they don't reflect the experience of Mac users involved in publishing. The new Publishing Disk Mix and Publishing Graphics Mix scores are based not on the work patterns of productivity software but on the behavior of Adobe Photoshop and QuarkXPress when used with large files on bigger screens doing more-demanding tasks.

MACWEEK MACBENCH 3.0 LABS

High-end Mac OS compatibles

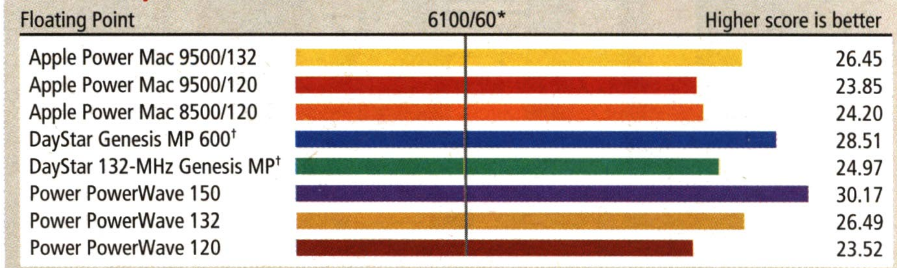
MacBench 3.0 points the way to the fastest PowerPC 604-based Mac for mainstream and technical use, and the 150-MHz PowerWave is it. DayStar's Genesis MP600 has four CPUs but needs special software.

Power Mac-native CPU speed



Processor	6100/60* Higher score is better
Apple Power Mac 9500/132	25.84
Apple Power Mac 9500/120	24.70
Apple Power Mac 8500/120	23.65
DayStar Genesis MP 600†	25.43
DayStar 132-MHz Genesis MP†	23.18
Power PowerWave 150	30.50
Power PowerWave 132	27.11
Power PowerWave 120	23.58

Processor speed in decimal math



Floating Point	6100/60* Higher score is better
Apple Power Mac 9500/132	26.45
Apple Power Mac 9500/120	23.85
Apple Power Mac 8500/120	24.20
DayStar Genesis MP 600†	28.51
DayStar 132-MHz Genesis MP†	24.97
Power PowerWave 150	30.17
Power PowerWave 132	26.49
Power PowerWave 120	23.52

Test configuration: Tests run with System 7.5.2. Extensions, other than QuickTime, were off; virtual memory on; and AppleTalk off.

†Tested using only one processor.

*MacBench's score compares speed to a Power Mac 6100/60, which receives a 10.

The new release of MacBench does not include an emulation test for CPU performance. We're still investigating the behavior of programs running under the three available 680x0 emulators — Apple's original emulator, Apple's dynamic-recompiling emulator and Connectix Corp.'s Speed Doubler — and in combination with Level 2 caches.

Other changes

We've made a number of other changes designed to make our test tool easier and more useful. Apple Guide is now included to help you run tests and learn MacBench's advanced features.

Version 3 lets you rearrange results in its window by Option-dragging the bars in the graph. You can more easily edit the values in the System Information window.

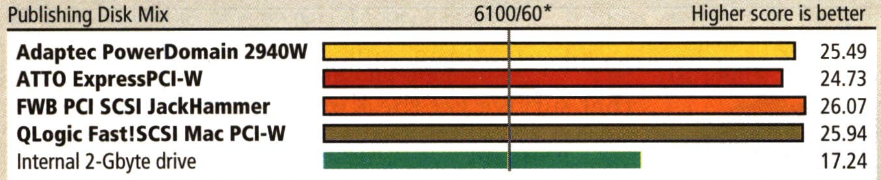
Ziff-Davis Benchmark Operation of Morrisville, N.C., can be reached via fax at (919) 380-2879, through its CompuServe forum at znt:zdbench and on the Web at http://www.zdnet.com/~zdbop/. □

MACWEEK MACBENCH 3.0 LABS

PCI Fast and Wide SCSI-2 cards

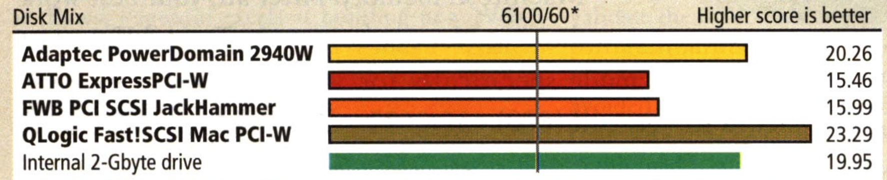
By adding a PCI SCSI card and an array, you can almost double performance in high-end publishing applications, but mainstream software may run slower.

Disk speed using QuarkXPress and Adobe Photoshop



Publishing Disk Mix	6100/60* Higher score is better
Adaptec PowerDomain 2940W	25.49
ATTO ExpressPCI-W	24.73
FWB PCI SCSI JackHammer	26.07
QLogic Fast!SCSI Mac PCI-W	25.94
Internal 2-Gbyte drive	17.24

Disk speed using general-purpose software



Disk Mix	6100/60* Higher score is better
Adaptec PowerDomain 2940W	20.26
ATTO ExpressPCI-W	15.46
FWB PCI SCSI JackHammer	15.99
QLogic Fast!SCSI Mac PCI-W	23.29
Internal 2-Gbyte drive	19.95

Test configuration: All cards tested on a Power Mac 9500/132 attached to a 4-Gbyte striped array of two Seagate drives.

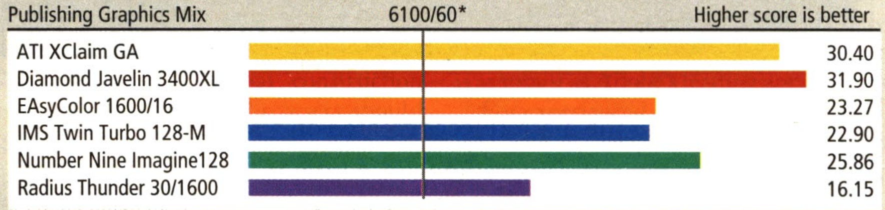
*MacBench's score compares speed to a Power Mac 6100/60, which receives a 10.

MACWEEK MACBENCH 3.0 LABS

PCI graphics cards

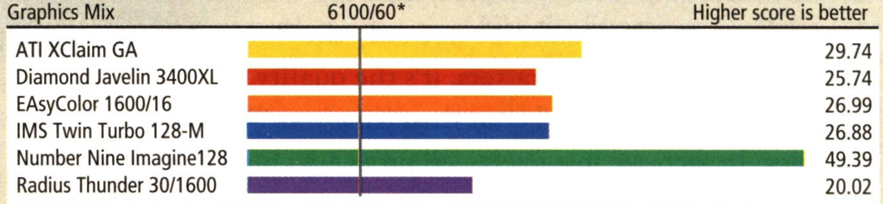
The Imagine128's font-caching feature shot its general-purpose Graphics Mix score out of the ballpark, but the fastest cards for mainstream applications were not on top for publishing tasks.

Graphics speed using QuarkXPress and Adobe Photoshop



Publishing Graphics Mix	6100/60* Higher score is better
ATI XClaim GA	30.40
Diamond Javelin 3400XL	31.90
EAsyColor 1600/16	23.27
IMS Twin Turbo 128-M	22.90
Number Nine Imagine128	25.86
Radius Thunder 30/1600	16.15

Graphics speed using general-purpose software



Graphics Mix	6100/60* Higher score is better
ATI XClaim GA	29.74
Diamond Javelin 3400XL	25.74
EAsyColor 1600/16	26.99
IMS Twin Turbo 128-M	26.88
Number Nine Imagine128	49.39
Radius Thunder 30/1600	20.02

Test configuration: All cards tested on a Power Mac 9500/132 attached to a 17-inch monitor set to 1,152-by-870-pixel resolution in 24-bit color.

*MacBench's score compares speed to a Power Mac 6100/60, which receives a 10.

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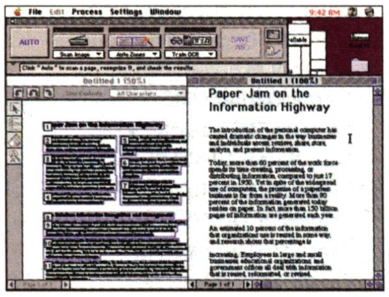

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The year in Reviews

These are the 280 products reviewed by MacWEEK in 1995, along with each review's publication date. This list is available on-line in the MacWEEK forums on CompuServe and the Web. *Review of beta version of the product; **Power Mac Quick Look; †Review appeared only on-line.

Accounting

FlexWare 8.0 State of the Art Inc.	07.31
QuickBooks 3.0 Intuit Inc.	03.06
Quicken for Macintosh 5.0† Intuit Inc.	01.23

CAD

Aperture 5.0 Aperture Technologies Inc.	07.24
MicroStation V5 Bentley Systems Inc.	04.10
PowerCADD 2.0 Engineered Software	07.10

Communications & networking

4-Sight Fax 3.0 4-Sight L.C.	08.07
AppleShare 4.0.2 Apple	02.27
AppleShare 4.2* Apple	10.23
CyberPhone Prometheus Products Inc.	11.06
DaynaComm Serial Roamer Dayna Communications Inc.	02.13
Faxcom for Macintosh 2.0 Biscom Inc.	08.07
FirstClass Fax Gateway 2.0 SoftArc Inc.	08.07
GeoPort Telecom Adapter kit Apple	05.22
LANsurveyor 2.0.1 Neon Software Inc.	01.30
Net Watchman 2.2 The AG Group Inc.	07.17
Server Management Bundle Santorini Consulting & Design Inc.	10.30
Skyline/Satellite 1.0.1 The AG Group Inc.	01.16
TribeLink8 Tribe Computer Works	02.06

CPUs & CPU accelerators

DayStar 100 MHz PowerPro 601 DayStar Digital Inc.	07.17
Genesis MP 600* DayStar Digital Inc.	12.11
KSV604 CPU Booster KS Labs Corp.	12.11
Macintosh PowerPC Upgrade Card Apple	02.13
Power 100* Power Computing Corp.	02.20
Power 100 Power Computing Corp.	04.17
Power 120 Power Computing Corp.	09.25
PowerBook 5300c Apple	12.11
PowerBook 5300ce* Apple	08.28
Power Mac 5200/75 LC Apple	04.03
Power Mac 7200/90 Apple	08.07
Power Mac 7500/100 Apple	08.07
Power Mac 8500/120 Apple	08.07
Power Mac 9500/132 Apple	06.19
Radius 81/110 Radius Inc.	09.25
Turbo 601* DayStar Digital Inc.	01.02
Workgroup Server 9150/120 Apple	06.19

Databases & forms processing

Cumulus 2.5 Canto Software Inc.	10.16
FileMaker Pro 3.0* Claris Corp.	10.02
Phyla 1.0.1 Mainstay	04.24
TrueAccess 1.0 Blyth Software Inc.	02.20

Desktop publishing

FingerType 1.0.1 XChange/World-Wide Power Co.	09.11
FrameMaker 5.0 Adobe Systems Inc.	08.07
PageMaker 6.0* Adobe Systems Inc.	07.17
PageMaker 6.0 Adobe Systems Inc.	09.11
PickUpSpot 1.2 Adept Solutions	09.11
PM to QXD Conversion Tools XChange/World-Wide Power Co.	09.11
Ready,Set,Go! GX 7.0.3 Manhattan Graphics Corp.	08.28
ShadowCaster XChange/World-Wide Power Co.	09.11
VivaPress Professional 1.5 Interpress Technologies Inc.	03.27

Digital video

Media 100 2.0 Data Translation Inc.	03.20
Media Suite Pro 3.1 Avid Technology Inc.	03.20
Radius Edit Radius Inc.	09.04
Radius VideoVision Telecast 1.0 Radius Inc.	09.04
Targa 2000 Truevision Inc.	10.02

E-mail & groupware

At Ease for Workgroups 3.0 Apple	09.18
BeyondMail 2.1 Banyan Systems Inc.	06.12
DiskGuard Remote 1.5 ASD Software Inc.	11.06
Emailer 1.0 Claris Corp.	08.21
FirstClass 2.6 SoftArc Inc.	05.29
FreeMail 4.0 FreeMail Inc.	06.05
MailKeeper 1.0.2 Nisus Software Inc.	10.23
Meeting Maker XP 3.0 ON Technology Corp.	08.28
Notes 4.0* Lotus Development Corp.	12.11
Now Contact 3.5 Now Software Inc.	07.10
Now Up-to-Date 3.5 Now Software Inc.	07.10
OpenMind 1.0.1 Digital Communications Associates Inc.	03.13
QuickMail 3.5 CE Software Inc.	11.13
Snap Mail 2.0.1 Cassady & Greene Inc.	06.05

Games

AmoebArena† Casady & Greene Inc.	12.04
Apeiron† Ambrosia Software Inc.	12.04
Bad Day on the Midway Inscape	12.04
Buried in Time Sanctuary Woods Multimedia Inc.	12.04
The Cartoon Guide to Physics† HarperCollins Interactive	12.04
The Daedalus Encounter† Virgin Interactive Entertainment	12.04
Dark Forces LucasArts Entertainment Co.	12.04
Descent MacPlay	12.04
Doom II GT Interactive Software Corp.	12.04
Dr. Seuss's ABC Living Books	12.04
Dust: A Tale of the Wired West CyberFlix Inc.	12.04
Frankenstein MacPlay	12.04
Full Throttle LucasArts Entertainment Co.	12.04
Glider Pro CD† Casady & Greene Inc.	12.04
If Monks Had Macs The Voyager Co.	12.04
The Incredible Machine 3 Sierra On-Line Inc.	12.04
Loony Labyrinth StarPlay Productions Inc.	12.04
Marathon 2: Durandal Bungie Software Products Corp.	12.04
PegLeg Changeling Inc.	12.04
Power Pete MacPlay	12.04
Quest For Fame* Virtual Music Entertainment Inc.	12.04
Supreme Warrior Digital Pictures Inc.	12.04
Swoop† Ambrosia Software Inc.	12.04
Total Distortion Pop Rocket Inc.	12.04
Warcraft: Orcs and Humans Blizzard Entertainment	12.04
The Way Things Work DK Multimedia	12.04
Widget Workshop Maxis	12.04
X-Wing* LucasArts Entertainment Co.	12.04
You Don't Know Jack† Berkeley Systems Inc.	12.04

Graphics & illustration

Canvas 3.5.3** Deneba Software Inc.	03.27
Chagall 2.0.1 TechnoSystems USA	09.25
ClarisImpact 2.0 Claris Corp.	09.25
Colorize 2.0 DS Design Inc.	07.24
FreeHand 5.0 Macromedia Inc.	02.06
FreeHand 5.5 Macromedia Inc.	11.27
Live Picture 2.0 MetaTools Inc.	05.08
PhotoFix 1.0 Microspot USA Inc.	06.12
PixelPaint Pro 3.0.2** Pixel Resources Inc.	04.10
SmartSketch 1.0 FutureWave Software Inc.	06.19
Tracer 1.0 ScanVec Inc.	10.30
xRes 1.0 Macromedia Inc.	02.06
xRes 1.11 Macromedia Inc.	05.22

Graphics cards

EAsyColor 24/1600 EA Research Inc.	04.17
PaintBoard Prism GT Truevision Inc.	04.17
PowerShop Adaptive Solutions Inc.	10.09
QuickDraw 3D Accelerator Card Apple	11.13
Thunder IV GX 1600 Radius Inc.	04.17
ThunderColor 30/1600 Radius Inc.	12.11
Twin Turbo 128-M Integrated Micro Solutions	09.04
XClaim GA ATI Technologies Inc.	09.18

Graphics utilities

Batch It! 1.0 Gryphon Software Corp.	02.20
The Black Box 2.0 Alien Skin Software LLC	08.14
Cadmover 4.0 Kandu Software Corp.	05.29
ColorDrive 1.0 Pantone Inc.	03.13
ColorMatch 1.1 DayStar Digital Inc.	03.06
Infinite FX 1.0 BeInfinite Inc.	03.20
Kai's Power Tools 3.0 MetaTools Inc.	11.27
Kodak Color Management System Eastman Kodak Co.	09.11
KPT Convolver 1.0 MetaTools Inc.	01.30
KPT Vector Effects 1.0 MetaTools Inc.	06.26
MaskCutter PS 2.1 Scitex America Corp.	09.18
Paint Alchemy 2.0 Xaos Tools Inc.	04.03
PaperPower 1.1.2b Piptel	03.20
Precision Input Color Characterization Eastman Kodak Co.	03.06
QX-Tools 1.0 Extensis Corp.	10.16
ScreenReady 1.0 Adobe Systems Inc.	08.28
Series 3 Screens Filter 1.2 Andromeda Software Inc.	08.21
SG Relief 1.0, SG ToolBox-1 & SG ToolBox-2 Scarlet Graphexx B.V.	06.12
TextureMaker 1.0 Adobe Systems Inc.	01.16
xTools One 1.0 xman Software	10.23

Input devices

Desktop GlidePoint Alps Electric (USA) Inc.	11.27
GlidePoint Desktop for Macintosh Cirque Corp.	11.27
Kensington Mouse Kensington Microware Ltd.	11.06
QuePoint II MicroQue Inc.	11.27
Thinking Mouse Kensington Microware Ltd.	03.13
Touché Touch Pad Touché Technologies Inc.	11.27
Wacom ArtZ II 6x8 Wacom Technology Corp.	09.11

Internet

Apple Internet Server Solution for the World Wide Web Apple	09.11
HoTMetaL Pro 2.0 SoftQuad Inc.	10.30
Internet Valet 1.0.1 Software Ventures Corp.	07.24
Netscape Navigator 2.0* Netscape Communications Corp.	10.16
OneWorld Internet Global Village Communication Inc.	03.27
PageMill* Ceneca Communications Inc.	09.25
Pathway Access for the Macintosh 3.1 Wollongong Group Inc.	07.10
Snatcher 1.0 Software Ventures Corp.	03.13
TCP/Connect II for Macintosh 2.1 InterCon Systems Corp.	04.03

Mapping

ArcView 2.1 Environmental Sysems Research Institute Inc.	10.16
MapInfo 3.0 MapInfo Corp.	10.02

Monitors

AppleVision 1710AV Apple	11.06
PressView 17 SR Radius Inc.	11.06

Multimedia software

Astound 2.0 Gold Disk Inc.	10.09
Authorware 3.0 Macromedia Inc.	08.21
CyberSound FX 1.0 InVision Interactive Inc.	08.14
Digital Chisel 2.0 Pierian Spring Software	12.11
MediaPaint 1.0 Strata Inc.	05.29
mPower 1.0 Multimedia Design Corp.	01.23
Multimedia Utilities 1.0 Motion Works International Inc.	01.30
PROmotion 1.5.3 Motion Works International Inc.	07.31
Q2 1.1 Waves	08.21
Special Delivery 2.1 Interactive Media Corp.	12.11
SuperCard 2.0 Allegiant Technologies Inc.	04.10
Transjammer Volume 1 Elastic Reality Inc.	04.24

Operating systems

NetWare 4.1 Novell Inc.	02.27
SoftWindows 2.0* Insignia Solutions Inc.	06.26
SoftWindows 2.0 Insignia Solutions Inc.	10.02
System 7.5.2 Apple	06.19
Windows 95 (Part 1) Microsoft Corp.	08.07
Windows 95 (Part 2) Microsoft Corp.	08.14
Windows 95 (Part 3) Microsoft Corp.	08.21
Windows NT Server 3.5 Microsoft Corp.	02.27

PDAs

FilePad 1.0 HealthCare Communications Inc.	01.02
Graffiti 1.0 Palm Computing Inc.	01.02
Marco* Motorola Inc.	01.02
Newton OS 2.0 Apple	10.30
Notion List Manager 1.1 Eidetic Inc.	01.02
PowerForms 1.0 Sestra Inc.	01.02

Printers & output devices

Citizen PN60 Citzen America Corp.	03.06
Color LaserWriter 12/600 PS* Apple	06.19
Color StyleWriter 2200 Apple	07.17
FotoFUN! Fargo Electronics Inc.	08.21
HP 1600CM Hewlett-Packard Co.	10.16
HP DeskWriter 660C Hewlett-Packard Co.	07.24
LaserJet 5MP Hewlett-Packard Co.	05.22
LaserWriter 16/600 PS Apple	02.27
Lexmark Optra Rx Lexmark International Inc.	02.06
magicolor LX QMS Inc.	03.20
Phaser 340 Tektronix Inc.	03.06
Phaser 540 Tektronix Inc.	02.13
XPrint 4920 Xerox Corp.	10.02

Productivity & PIMs

ACT! 2.5 Symantec Corp.	12.11
ClarisWorks 4.0 Claris Corp.	07.10
In Control for Workgroups 3.5 Attain Corp.	04.24
InfoGenie 1.0.2 Casady & Greene Inc.	06.26
InTouch 2.5 Prairie Group Inc.	05.22
Now Contact 3.0 Now Software Inc.	01.02
Now Up-to-Date 3.0 Now Software Inc.	01.02

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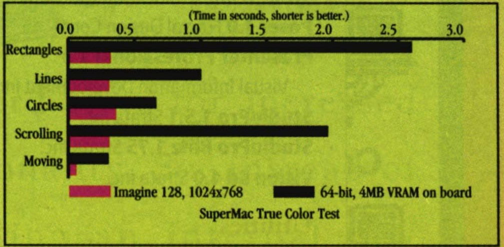

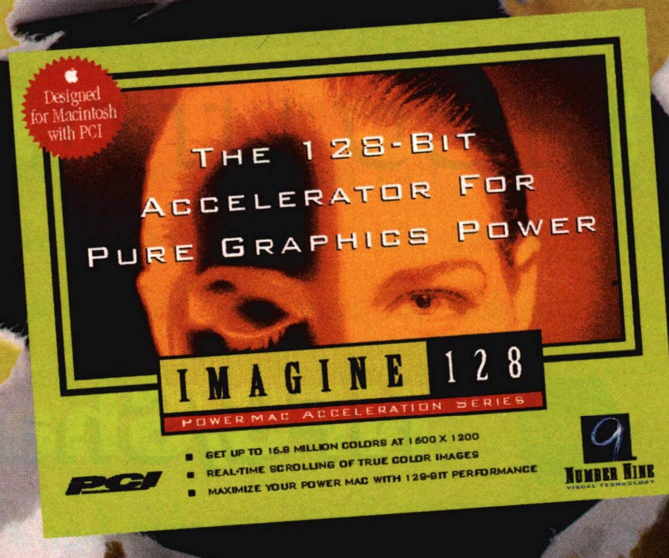
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Year in Reviews

From Page 92

Programming

FaceSpan 2.0 Software Designs Unlimited Inc.	06.12
Script Debugger 1.0.4 Late Night Software Ltd.	11.13
Script Debugger 1.0.4† Late Night Software Ltd.	11.13
Scripter 1.0 Main Event Software Inc.	06.12

Project management

FastTrack Schedule 3.0 AEC Software Inc.	05.01
Plan & Track 3.5 Mainstay	05.01

Scanning & imaging

AX-1200 Scantouch Nikon Inc.	08.14
Colortron Light Source Computer Images Inc.	03.13
ES-1000C Epson America Inc.	10.16
Imaxis 2.01 Systems Engineering Solutions Inc.	05.15
Kodak Digital Camera 40 Eastman Kodak Co.	08.07
PaperPort 2.0 Visioneer Inc.	01.16
PaperPort Vx Visioneer Inc.	11.27
QuickScan35 Minolta Corp.	10.23
QuickTake 150 Apple	08.07
Read-It Pro 5.0 Olduvai Corp.	04.03
ScanJet 3c Hewlett-Packard Co.	05.29
ScanPartner Jr. Fujitsu Computer Products of America Inc.	04.10
ScanPrepPro 2.0.2 ImageXpress Inc.	08.14
ScanWizard 3.0 Microtek Lab Inc.	08.07
SprintScan 35 Polaroid Corp.	09.25
Super Coolscan LS-1000 Nikon Inc.	09.25
VIP Scan 2.0 La Cie Ltd.	08.21

Spreadsheets, analytical & graphing

CrossTarget 3.0† Dimensional Insight Inc.	01.16
SAS System 6.10 SAS Institute Inc.	09.25
StatView 4.5 Abacus Concepts Inc.	11.27

Storage

AppleCD 600e Quad-Speed Apple	06.26
APS DLT20 APS Technologies	05.22
APS Q 1080 APS Technologies	10.23
APS Q 4.0 APS Technologies	10.09
COREarray 20000 CORE International Inc.	01.09
DataDock PCI array MicroNet Technology Inc.	09.25
Deltis PowerMO 230 Olympus Image Systems Inc.	09.18
DisKovery 650CDR/CD-R Access 1.1 Optima Technology Corp.	08.14
EZ135 SyQuest Technology Inc.	09.04
hammerCD 6x Reader FWB Inc.	06.26
hammerPE 1000FMF FWB Inc.	10.23
HyperTape APS Technologies	07.17
La Cie Joule Array La Cie Ltd.	01.09
Master CD Pro 2.5.2 MicroNet Technology Inc.	06.26
Mega Drive MR/5 Mega Drive Systems Inc.	01.09
Mirror 4.2GB Mirror Technologies Inc.	10.09
Mirror Precision 10 Mirror Technologies Inc.	01.09
MultiSpin 6X NEC Technologies Inc.	06.26
PLI Infinity 4.2GB PLI Inc.	10.09
PowerDrive2 Panasonic Communications & Systems Co.	11.13
RCD-1000 Pinnacle Micro Inc.	02.20
Retrospect 3.0 Dantz Development Corp.	12.11
SCSI PowerPlug II & NT Hot Wire Technology Inc.	12.11
SledgeHammer•FT* FWB Inc.	01.09
Zip drive Iomega Corp.	04.17

Storage cards

ATTO ExpressPCI-MC ATTO Technology Inc.	10.02
Fast!SCSI MAC PCI-W QLogic Corp.	10.09
PCI SCSI JackHammer FWB Inc.	08.28

3-D software

AddDepth 2.0 Ray Dream Inc.	07.17
form•Z RenderZone 2.7g1 autodessys Inc.	07.31
Infini-D 3.0 Specular International Ltd.	09.18
Poser 1.0 Fractal Design Corp.	06.05
Presenter Professional 3.0 Visual Information Development Inc.	01.23
StudioPro 1.5.1 Strata Inc.	02.13
StudioPro Blitz 1.75 Strata Inc.	10.23
Vision 3d 4.0 Strata Inc.	05.15

Utilities

Aladdin Desktop Tools 1.0 Aladdin Systems Inc.	05.15
Conflict Catcher 3.0 Casady & Greene Inc.	05.08
DIMM Tree Newer Technology	09.18
DragStrip 1.0 Natural Intelligence Inc.	03.06
DragStrip 2.0 Natural Intelligence Inc.	08.14
EndNote Plus 2.0† Niles & Associates	02.06
FolderBolt Pro 1.03 Kent Marsh Ltd.	03.20
MacBench 2.0 Ziff-Davis Publishing Co.	02.13
MacLinkPlus 8.0 DataViz Inc.	01.16
OptiMem RAM Charger 2.01 Jump Development Group Inc.	05.15
Peace of Mind 3.0.2 DiagSoft Inc.	11.13
Peirce Print Tools 1.0 Peirce Software Inc.	01.30
PopupFolder 2.0.1 Inline Software	09.18
Speed Doubler 1.0 Connectix Corp.	08.28
StuffIt Deluxe 3.5 Aladdin Systems Inc.	01.23

Word processing

Word 6.0.1** Microsoft Corp.	04.03
WordPerfect 3.1 Novell Inc.	01.02
WordPerfect 3.5 Novell Inc.	10.30

Stratus Ultrix HP/UX Solaris Auspex SunOS NetBSD Lin
Pyramid IBM AIX NeXT Distinct IRIX Unisys SCO UNIX Tan
NetBSD Linux Univel Process Cray Stratus Wollongong HP
Unisys NetManage HP HP/UX TGV Pyramid FTP Sol
Distinct Tandem Auspex SunOS IBM AIX SGI Digital UNIX Uni
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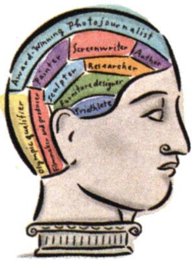

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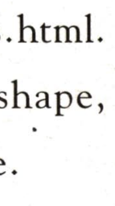

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"Digital cameras are still not yet suitable in performance and price beyond niche applications."

— Sam Merrell, Synthetic Imaging Inc.

DIGITAL CAMERAS

Mainstream photography migrating toward digital

By Eric J. Adams

There's a sense of inevitability in the professional ranks about digital photography. Despite the high costs, transition nightmares and limitations of the equipment, it's more a matter of when, not if, the digital tide will turn, according, to many professionals who took the plunge last year.

"The move to digital has already occurred. It's just that digital is moving up the stream in publishing work flow. If the last thing before the press is digital, then it makes sense to make everything digital earlier in the process, such as image capture," said Sam J. Merrell, president of Synthetic Imaging Inc., a digital photography consultant firm in New York.

That's not to say that all the bugs of digital photography have been worked out. "Even though vendors now have a few years under their belts and the general base of knowledge has increased dramatically, we still haven't seen consistent, repeatable results in the marketplace larger than [2,000-by-2,000-pixel resolution]," said Merrell, who specializes in image-distribution and color-management issues. "We don't have things like ubiquitous color management or tagged files."

Despite high price and drawbacks, the advantages are too hard to ignore. "Quicker turnaround, integration into work flow, lowered cost, control over quality, transmission from the field, environmental concerns — all these factors are driving the market and will for some time," said John Larish, author of five books on digital photography and principal of Jonrel Imaging Consultants of Rochester, N.Y.

Professionals feel good about high-end digital cameras, but film isn't on its way out yet.

In the studio ranks, Janet Thompson, director of promotions, production and desktop services at Doubleday Book and Music Clubs Inc. in Garden City, N.Y., counts herself among the digital believers.

Thompson is in charge of pumping out 16 catalogs each year for 10 different Doubleday book and music clubs. That's not to mention fliers, enclosures and some 40 direct-mail campaigns yearly.

Studio success

Three-pass and scanning-back cameras suitable for still-life studio work include the Carnival 200 digital camera back from Scan-View Inc. of Foster City, Calif.; the Dicomed Digital Camera Back from Dicomed Inc. of Burnsville, Minn.; the DCB and Catchlight from Leaf Systems Inc. of Westboro, Mass.; the Photo Phase from Phase One U.S. Inc. of Northport, N.Y.; and the DKC-5000 (CatsEye) from Sony Electronics Inc. of Montvale, N.J. You can expect to pay from $15,000 to $35,000, not including all the necessary accouterments such as gigabytes of storage space, a powerful workstation for image manipulation and color correction, and perhaps new lighting and lenses.

At Doubleday, logistics were a nightmare with a conventional studio, according to Thompson. "With so many catalogs, sizing was always an issue. Plus, we were assembling layouts for one-piece separations, which meant we were constantly shooting and reshooting images," she said.

This past year, Thompson converted to a digital studio built around two high-end cameras, Nikon Inc.'s E2, and Sony Electronics' CatsEye. Every book and music title is now shot five times from different angles. Low-resolution images of all shots are available on-line to Doubleday's art directors for each catalog. When an art director selects an image, the low-resolution images are swapped out with the high-resolution images kept on a separate server.

The transition was difficult, as photographers had to digitally reshoot some 5,000 book titles at five different angles for a total of 25,000 images. With that work done, only new titles need to be shot.

The database of images, 54 Gbytes in all, is stored on mirrored hard drives on Intel-standard PC servers. "We looked at opticals and CD-ROM for storage but the nature of the work demanded the images be live all the time," Thompson said.

Although the transition cost a bundle, Doubleday initiated the project for flexibility and possible cost savings down the line, and, according to Thompson, both goals were achieved.

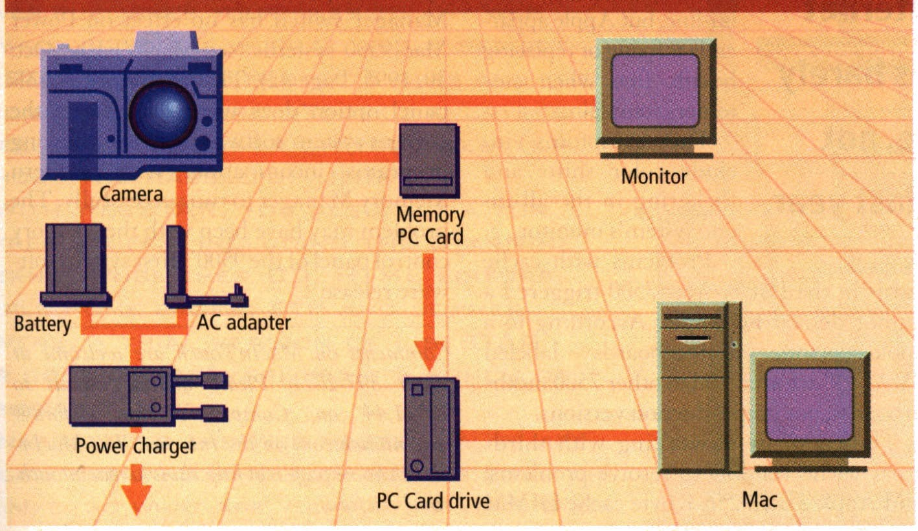
"Instead of having one version of the catalog we now have two or three versions. Before, that would have required lots more work and more employees," Thompson said. "It gives us lots of flexibility we didn't have in the past."

Cheaper, faster service

Mark Braun, owner of Akron, Ohio-based Braun Photography/Carey Color Inc., completed his transition to digital last year at his thriving 20-year-old advertising and catalog photography business. Braun does all but live model work with digital cameras.

Braun chose the Leaf Digital Back to attach to his Sinar 4x5. He also brought in a Mac Quadra 950 and 650 for proofing and

See Solutions, next page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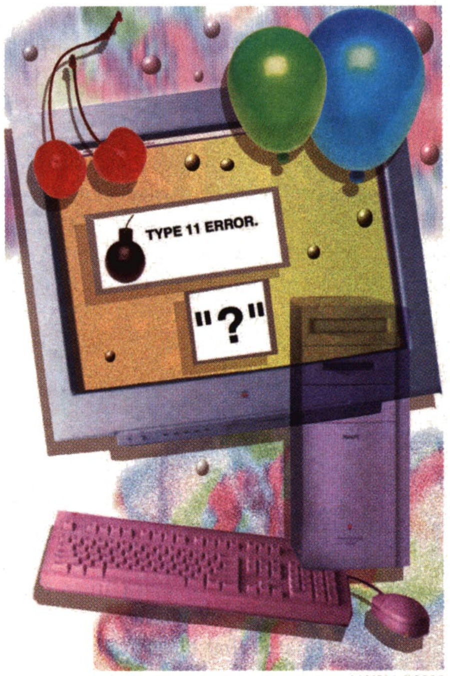

PAMELA HOBBS

MACINTOUCH

RIC FORD

Taking stock at new year and noting problems

The start of a new year is a good time for taking stock.

Last year brought the Macintosh unprecedented raw performance for the dollar, but problems with quality and complexity raised real costs. Meanwhile, Intel Corp. pushed personal computer hardware ahead swiftly, and Microsoft Corp. delivered great improvements to Windows.

The coming year may raise competition to a new level if PowerPC Platform (PPCP) systems deliver on their promises. The PPCP (formerly Common Hardware Reference Platform) defines an architecture that is supposed to run the Mac OS, Unix (Solaris and AIX), Windows NT, NetWare and OS/2. In theory, this will give us more choice in hardware and complete flexibility in software. Specifications are available on the Internet at http://chrp.apple.com/.

PPCP sets the stage for a head-to-head battle in 1997, when Apple promises Copland and Microsoft will offer more-advanced Windows NT systems.

The transition to new operating systems will gradually shuffle the market, and Apple needs a better hand. Copland is no trump card. One look at Be Inc.'s

See MacInTouch, next page

SOLUTIONS

From previous page

CD mastering. For additional photographic control, Braun outfitted the studio with new strobe lighting, and he purchased new lenses for f-stop control in 0.1-stop increments.

"It took us a while to learn, and we're still learning, but we are using the system to go up to 11-by-17-inch double-page spreads," Braun said.

The drive behind the move was simple: better customer service, Braun said. "Because we bypass film processing and separation, the turnaround is far quicker. And the instant results allow us to run through setups faster. We used to do three or four setups a day, now we can do six or more," Braun said.

"And we're working with 21-inch high-resolution monitors, so when a client is here they are looking at very large images rather than a Polaroid," Braun said. "Then we can deliver the images on CD-ROM to them for their use. I've seen a 50 percent increase in the number of companies that want CDs rather than transparencies."

Braun estimated that he has cut the cost of each shoot by about 25 percent. At first he was concerned that he was cutting into his profit as well. "What has actually happened is I'm making more money because clients want me to resize, retouch or repurpose images for them."

Field forays

The rigors of on-location shooting require a completely different digital animal than the one needed for studio work. What's needed is a one-shot image-capture device. While these cameras can't match the quality of a studio camera, they are fast enough to stop motion.

One-shot field cameras include the Kodak Professional DCS 420 and DCS 460 from Eastman Kodak Co. of Rochester, N.Y.; the E2 and E2s from Nikon of Melville, N.Y.; and the EOS-DCS 1 from both Canon USA Inc. of Lake Success, N.Y. and Kodak. These cameras range from $11,000 to $30,000, depending on configuration.

Janet Thompson, director of promotions, production and desktop services at Doubleday Book and Music Clubs, produces 16 catalogs each year for 10 different clubs. Thompson converted to a digital studio built around two high-end cameras: Nikon's E2 and Sony's CatsEye.

DANUTA OTFINOWSKI

"Most users are newspapers, printing on newsprint in 5 by 7 inches or under," said Frank Folwell, deputy managing editor for graphics and photos at USA Today in Arlington, Va. "The printing process is more forgiving and quality issues are not as demanding. You can't overestimate the primary advantage of these take-along digital eyes.

"We can beat film by a half an hour at least, [and] that means that we can get photos in our earlier editions that we couldn't before, which means 50 percent of our readers are getting pictures they wouldn't [have gotten] before," Folwell said.

Because of the limitations of the cameras in low-light and mixed-light locations, USA Today photographers use their Eastman Kodak Professional EOS-DCS 3 cameras only at planned events on deadline. The cameras are not suitable for many sporting events either, Braun said.

"There's a lot of cropping in sports photos, but there's not enough information to crop a digital photo because of the lack of pixel density."

Nor does Folwell buy the cost-savings argument. "Everybody says you save money because you don't have to buy film, but I found it really doesn't wash because PC Cards are about $320 a piece. They get lost or dropped a lot — the attrition rate eats up an awful lot of them," Folwell said.

USA Today is currently shooting less than 10 percent of its photos digitally, but Folwell expects a big increase this year.

The newspaper has purchased 10 cameras and 10 PowerBook 540c machines for staffers. The first new cameras are in the field in Bosnia, sending back photos via satellite of American troops in action. "You can be in the middle of nowhere with a PowerBook and transmit photos. We think it's the right way to go," Folwell said.

You say you want evolution

That's also the view held by Grant Jamison, a communications specialist with Detroit Edison. Jamison is in charge of putting out Edison Today, a two-color, tabloid-size biweekly that includes a half-dozen location photos per issue.

Though he doesn't work in a high-volume shop by any means, Jamison purchased a digital camera for cost savings and also because the company likes to promote environmentally friendly technology. He chose the Nikon E2 simply because all his lenses were Nikon.

Call it coincidence or convergence, but at the same time Jamison got his new digital camera, he was also placed in charge of images for Detroit Edison's new World Wide Web home page.

"It worked out perfectly that the images were now digital and stored on the network," said Jamison, who takes his JPEG photos, color corrects them in Adobe Photoshop and exports them in GIF format for use on the Web.

"We're constantly looking for new ways to use the images we capture and the camera itself."

Like many, Jamison is finding that the move to digital photography is a natural evolution in our digital age.

Synthetic Imaging's Sam Merrell said: "We've had two years to bash the technology, but now as image makers become more educated, as pre-press houses become more confident of receiving RGB data from photographers, as photographers figure out how to pay for all this stuff, we're seeing digital cameras begin to migrate into the mainstream." □

MACINTOUCH

From previous page

current BeBox shows the kind of vision Apple lacks.

Meanwhile, the whole model of computing is changing. Stand-alone personal computers are evolving into clients and servers connected by the Internet. Apple's Internet support was barely adequate, not aggressive, last year. It needs to do much better. Shareware programmers, including WebStar author Chuck Shotten, kept the Mac in the game, but Apple contributed little. Its domain name server, promised for midyear, still had not arrived by December. Other essential tools, such as a news server and a complete suite of TCP/IP utilities are missing, too.

Products materialize

Open Transport could be a major improvement to the Mac architecture, but Apple needs to turn around 1995's fumbles and gain ground in 1996.

Quickly stabilizing Open Transport and delivering a good Point-to-Point Protocol client and server would help. Releasing Cyberdog from vaporware and making Apple Remote Access standard in the Mac OS would make sense, too.

Another test of Apple's strategy will be its upcoming Unix-based servers. If these do not support a full complement of TCP/IP server and routing applications, it will be hard to take Apple seriously in the Internet server market.

Apple's Internet support was barely adequate, not aggressive, last year.

Moving to the mundane details of the most important Mac issue, quality, the company released an important networking fix in mid-December. Open Transport 1.1 and System 7.5.3 should also arrive shortly, bringing a slew of critical fixes.

Ethernet (Built-In) is an extension that holds the driver for Apple's on-board Ethernet in PCI-based Power Macs. A bug in versions 1.0 and 1.0.1 caused networking to fail in some circumstances, particularly with large packets and heavy activity.

Apple finally admitted the problem (after customers posted details on the Internet), releasing a fix to the public two months after creating it. Version 1.0.2 of the extension is available from standard Apple support libraries on-line.

Another problem, in 5200-series systems, had not been documented officially when I checked on-line, but Apple apparently is fixing or replacing boards free when customers complain.

The symptoms include color shifts and flickering in the all-in-one system's monitor.

Problems with cache cards in the Power Mac 7500 triggered a rumor denied by Apple. According to a spokesperson, motherboards labeled "VAL-4" are identical to other 7500 motherboards, not preproduction versions.

The company is working with third-party cache vendors to resolve problems, and Apple's own 256-Kbyte cache DIMM (dual in-line memory module) is supposed to work correctly.

One reader reported incompatibilities between an 8500 clock accelerator and 512-Kbyte cache DIMMs, and this area looks ripe for potential problems.

Modern memory mystery

A few readers took issue with Akimbo Systems report that the Modern Memory Manager switch has no effect on Power Mac 9500 systems (see MacWEEK, Oct. 30, 1995, Page 42). This Memory control-panel option does work, at least in the current system software release, allowing programs incompatible with Modern Memory Manager to run successfully. The problem may have been with the Memory control panel of the 9500's first system software release. □

Comments on MacInTouch are welcome at (508) 897-2621. Please address e-mail to 72511,44 on CompuServe or ricford@macintouch.com on the Internet. The MacInTouch home page is at http://www.macintouch.com/~ricford/.

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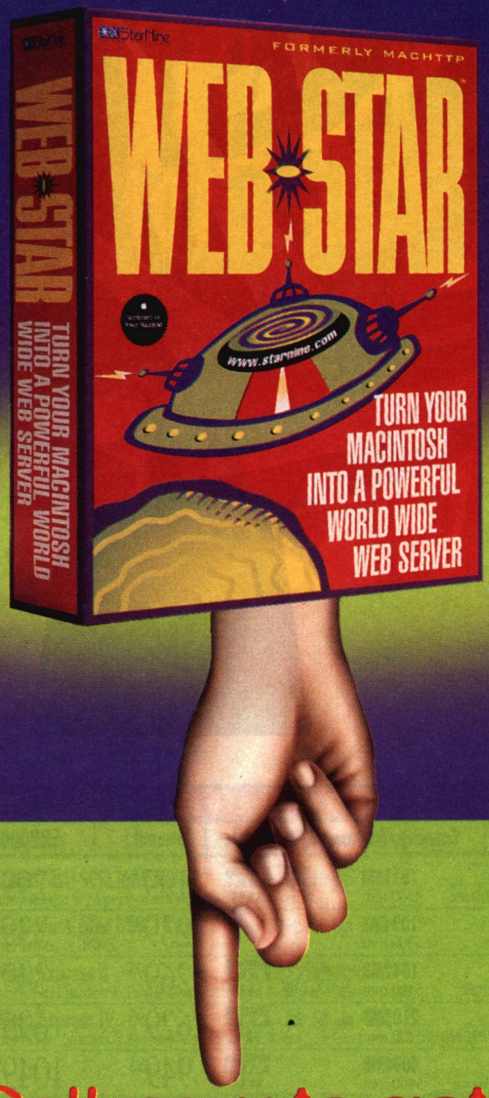

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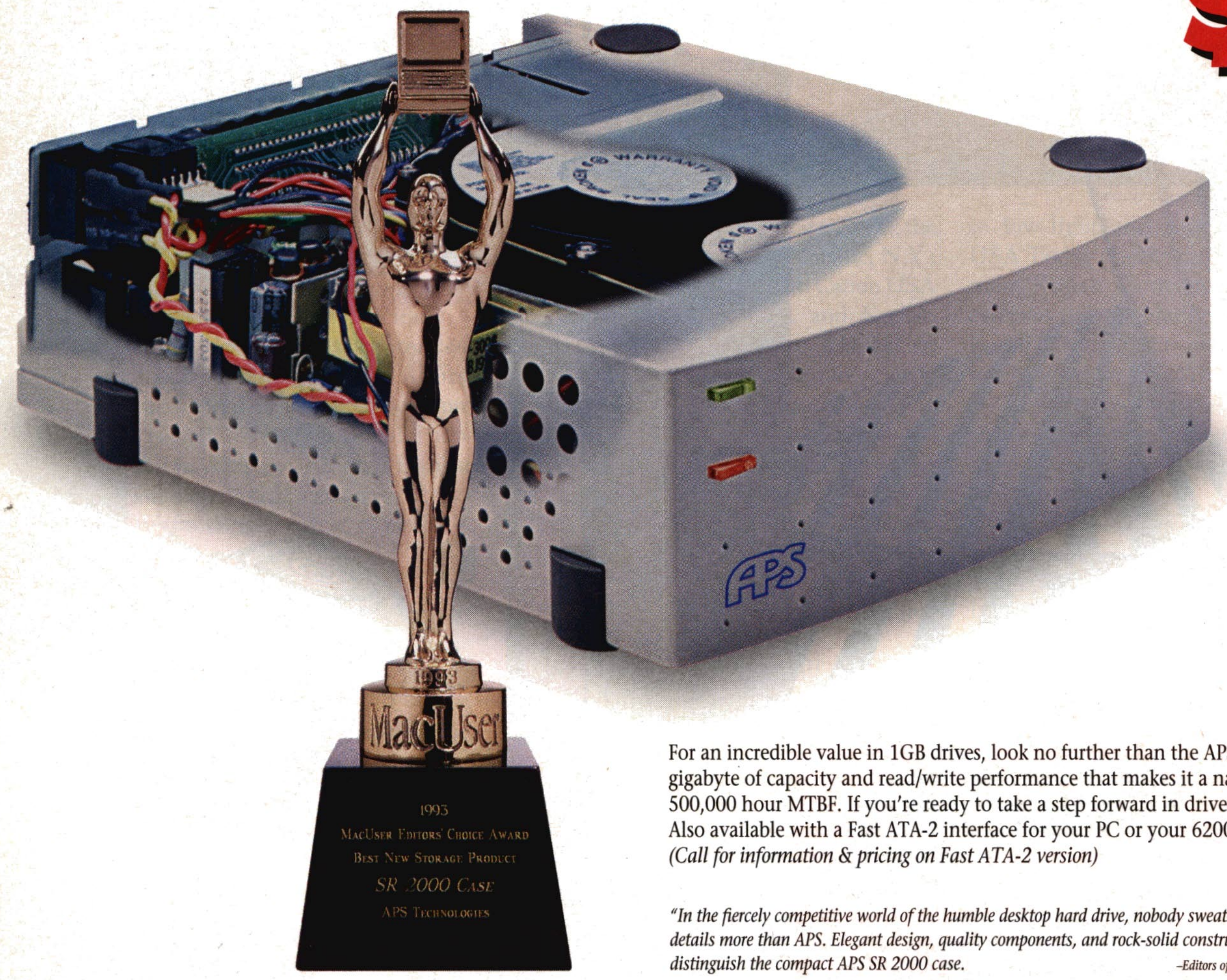

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APS Q 2.0[5] Quantum Atlas XP32150	**2050MB** 7200 rpm	MacUser/ZD LABS ★★★★	799^{95}	899^{95}
APS ST 2.0[5] Seagate ST 32550N Barracuda	**2047MB** 7200 rpm		799^{95}	899^{95}
APS MS 4.0[5] Micropolis 3243	**4064MB** 7200 rpm	MacUser/ZD LABS ★★★★	1099^{95}	1199^{95}
APS Q 4.0[5] Quantum Atlas XP34300	**4101MB** 7200 rpm	◆◆◆◆ MacWEEK MacUser/ZD LABS ★★★★½	1199^{95}	1299^{95}
APS ST 4.0[5] Seagate ST 15150N	**4094MB** 7200 rpm	MacUser/ZD LABS ★★★½	1299^{95}	1399^{95}
APS MS 9.0[5] Micropolis 1991	**8669MB** 5400 rpm		2199^{95}	*2399^{95}
APS ST 9.0[5] Seagate ST410800N	**8669MB** 5400 rpm	MacUser/ZD LABS ★★★★	2199^{95}	*2399^{95}

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Model	Capacity/Features	Awards	Internal	SR2000
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APS MS 4.0AV[5] Micropolis 3243AV	**4064MB** 7200 rpm		1199^{95}	1299^{95}
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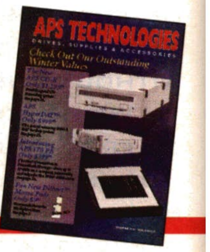
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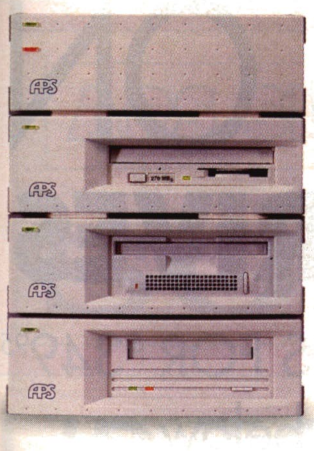

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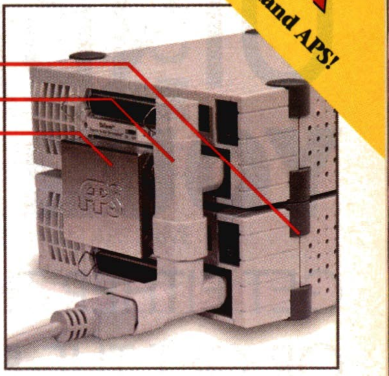

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Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0W[5] Micropolis 4221W	**1955MB** 7200 rpm		$\$799^{95}$	$\$899^{95}$
APS Q 2.0W[5] Quantum Atlas XP32150W	**2050MB** 7200 rpm		899^{95}	999^{95}
APS MS 4.0W[5] Micropolis 3243W	**4064MB** 7200 rpm		1199^{95}	1299^{95}
APS Q 4.0W[5] Quantum Atlas XP34300W	**4101MB** 7200 rpm		1299^{95}	1399^{95}

APS ADAPTER & ACCELERATOR CARDS

Model	External SCSI Connection	Price
QLogic Fast! SCSI MAC PCI-N Increases the SCSI performance of your PCI Power Mac	**HD 50-pin**	$\$299^{95}$
QLogic Fast! SCSI MAC PCI-W For Fast/Wide drives	**HD 68-pin**	379^{95}
Silicon Express II For NuBus Quadras & Power Macs only. Fast SCSI-2 accelerator card	**DB25 connection**	499^{95}
Silicon Express IV For NuBus Quadras & Power Macs only. Fast/Wide accelerator card & adapter	**HD 68-pin**	849^{95}

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External configuration

SyQuest®

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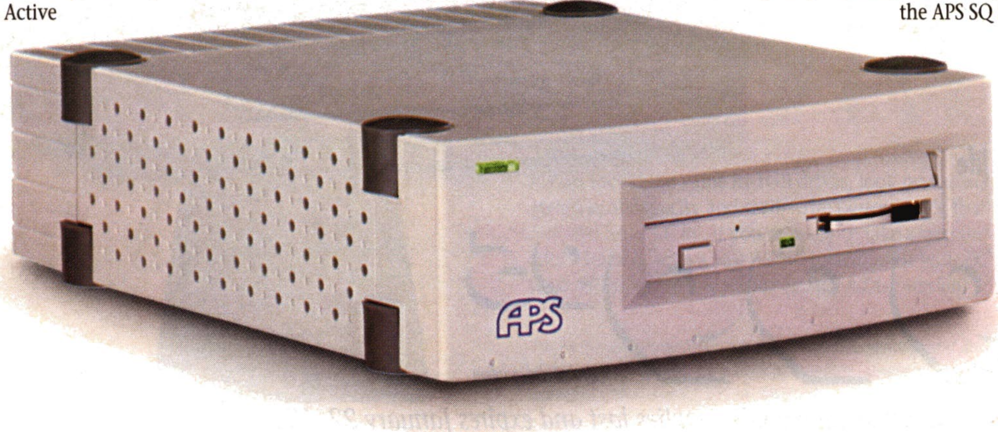

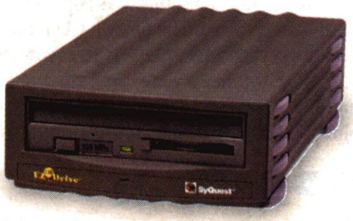

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APS SQ 3270[2] Our best performing removable cartridge drive	**255MB**	LABS ★★★★	329^{95*}	349^{95*}
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Model	Awards	SR2000
APS 230MB MO[2] Increased performance with 4500 rpm drive	LABS ★★★★	$\$499^{95}$
APS 1.3GB MO[1] A 4MB cache improves performance		1699^{95}

[1-5] *Denotes length of manufacturer's warranty in years*

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Model	Features	Awards	Internal	SR2000
APS T 3701[1] Sustained data transfer rates up to 1000KB per second	**6.7X-SPEED**		$\$399^{95}$	$\$449^{95}$
APS PD4[1] Removable optical storage backup with CD-ROM in one device	**Dual-Purpose Drive**	NEW FROM APS	N/A	599^{95}
APS CD-R[1] 650MB CD-R media costs less than 2¢ per MB	**RECORDABLE CD-ROM**		N/A	999^{95*}

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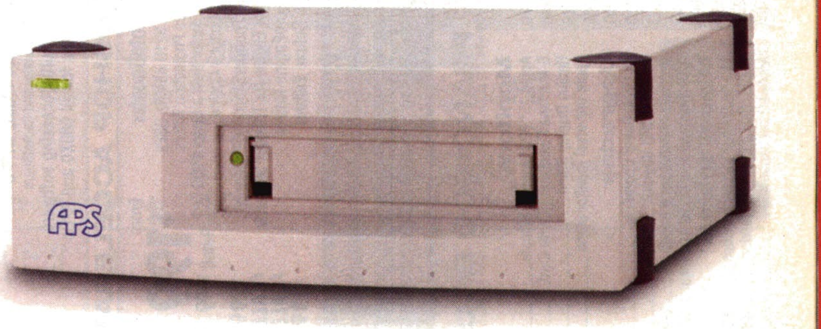

APS QIC & DAT TAPE BACKUP DRIVES

Model	Capacity*/Features	Awards	Internal	SR2000
APS HyperQIC™^{2} QIC 3080 Mechanism	2GB◆	◆◆◆◆ MacWEEK MacUser ZD LABS 3½	N/A	$\$499^{95}$
APS ProDAT^{2} DDS-2 Non-Compression Mechanism	4GB◆		$\$749^{95}$	799^{95}
APS HyperDAT^{2} DDS-2 Compression Mechanism	8GB†		949^{95}	999^{95}
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Model	Capacity*/Features	Awards	Internal	SR2000
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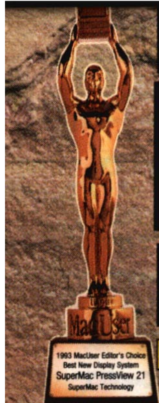

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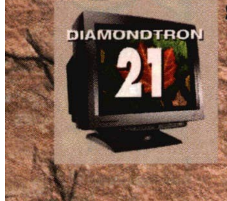

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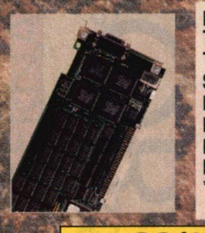

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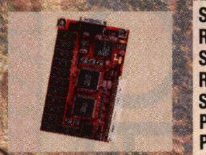

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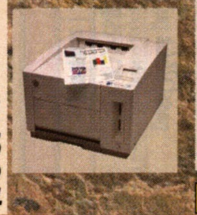

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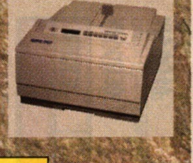

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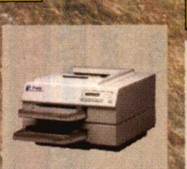

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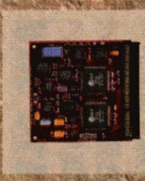

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SE analog board	$129
SE Power Supply	$129
1.44 FDHD floppy (used)	$199
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We are the High-end storage configuration Experts. Call us for your solutions on RAID Sytems, Video, Networks, and Jukebox applications. All Platforms.

"Direct Connections provided excellent technical support." **MacWorld July'95**
"Direct Connections' array offered the best performance per dollar of the drives tested." **Digital Video Oct. '94**
"Your next option is to locate...highly visible digital video suppliers like Direct Connections." **NEWMEDIA June '95**
"This array is the one to beat." **Ken Grey** Writer for WIRED, Computer User, MovieMaker, Computer Video, and Digital Video Magazine.
"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." **MacWorld April '95**

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HARD DRIVES
Differentials available

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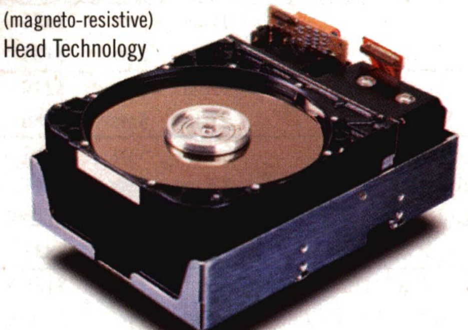

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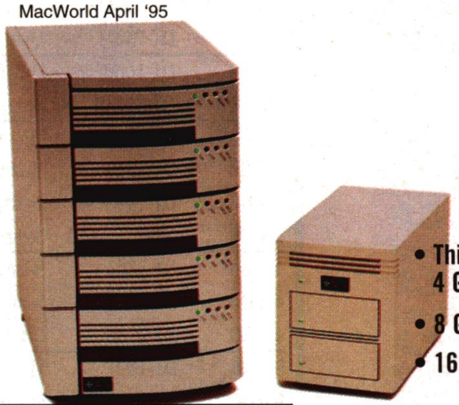
- 9 Years in business

5 YEAR WARRANTY

BRAND/MODEL	CAPACITY		ACCESS	RPM	INTERNAL	EXTERNAL
NEC**	730MB		11MS	4090	$ 219	$ 289
CONNER CFP1080S	1.2GIG	LP	11MS	5400	$ 295	$ 365
FUJITSU M1606s	1.2GIG	LP	10MS	5400	$ 299	$ 369
Seagate ST31230N	1.2GIG	LP	9MS	5400	$ 409	$ 475
Seagate Hawk	2.4GIG	LP	9MS	5400	$ 725	$ 795
Conner CFP2105S	2.1GIG	LP	9MS	5400	$ 665	$ 735
Fujitsu M2915S	2.1GIG	MR	8.9S	7200	$ 699	$ 799
Conner CFP2107S	2.1GIG	LP	8MS	7200	$ 759	$ 829
Quantum Capella	2.2GIG	LP	8.6MS	5400	$ 699	$ 799
Seagate Barracuda 2	2.5GIG	LP	8MS	7200	$ 865	$ 935
Seagate Barracuda 2W	2.5GIG	LP	8MS	7200	$ 939	$ 999
Conner CFP2107W	2.5GIG	LP	8MS	7200	$ 795	$ 895
1085Fujitsu m2934s	4.2GIG	MR	8MS	7200	$ 1095	$ 1175
Fujitsu m2934W	4.2GIG	MR	8MS	7200	$ 1175	$ 1245
Seagate Barracuda 4	4.1GIG		8MS	7200	$ 1295	$ 1365
Seagate Barracuda 4W	4.1GIG		8MS	7200	$ 1365	$ 1435
Seagate ST15230N	4.3GIG		9MS	5400	$ 999	$ 1099
Conner CFP4207S	4.2GIG		9MS	7200	$ 1045	$ 1115
Conner CFP4207wide	4.2GIG		9MS	7200	$ 1099	$ 1199
Grand Prix XP34301s	4.3GIG		8.6MS	7200	$ 1039	$ 1109
Seagate Elite 9	9.0GIG		11MS	5400	$ 2095	$ 2195
Seagate Elite 9W	9.0GIG		11MS	5400	$ 2295	$ 2395

RAID SYSTEMS
FAST DESKTOP OR SERVER

"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." MacWorld April '95



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12GIG with 2 PCI accelerator cards	$ 7799

- This Array is the one to beat!!

4 GIG Wide Raid	$ 2199
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Atto Silicon Express IV	$ 835
Atto Express PCI MC	$ 765
AHA Adaptec Mac	$ 349
SCSI Expander	$1345

OPTICAL DRIVES

INCREDIBLE !!

1.3GIG Optical for $1195 external including all cabling, and software!!

$1195

1 YEAR WARRANTY

CAPACITY	MODEL	EXTERNAL
230MB	Fujitsu	$ 499
4 Speed CD/ 650MB	PANASONIC PD	$ 635
1.3GB	NEC	$ 1195
1.3GB	Sony 4MB cache	$ 1695
Sony's latest technology → 26GB	Sony Jukebox	$ 4695

CD RECORDERS/PLAYERS

Ricoh 2 speed recorder/4 speed player

Includes software and 10 CD's

$999

Yamaha 4 speed Recorder/Player W/software	External	$ 2595
Yamaha 2 speed Recorder/ 4 speed Player	External	$ 1195
Yamaha 2x4 with built in hard drive	External	$ 1529
Pioneer 4 speed 6-Disc CD-ROM Changer	External	$ 465
Toshiba 3701 6 speed CD Player	External	$ 465
Pioneer 4 speed CD Player	External	$ 295
Panasonic PD 4 speed/650mb Optical	External	$ 635

Many CD Tower Configurations available. Upto 500 Disks!

TAPE BACK-UP

We are the tape-backup Experts

2 YEAR WARRANTY

$5499

40GIG

With 3.0MB/sec sustained transfer, the DLT4000 is perfect for digital video or pre-press with large data files.

All enclosures include one tape cartridge, cabling, and Retrospect software.

CAPACITY	MODEL	MEDIA	INTERNAL	EXTERNAL
-4GIG	Tandberg Panther	1/4"	$ 479	$ 549
*-8GIG	Sony 5000 DDS-2	4MM	$ 939	$ 999
-14GIG	Exabyte 8505XL	8MM	$ 2065	$ 2125
-10GIG	Exabyte 8505S	8MM	$ 1475	$ 1575
-30GIG	DLT2000XT	1/2"		$ 4195
-40GIG	DLT4000	1/2"		$ 5499
-140GIG	Exabyte-10h Library	8MM		$ 4999
-200GIG	Spectra Logic 4000	4MM		$ 8599
-280GIG	Breeze Hill Library	1/2"		$ 27999

MEDIA

Many Brands and sizes in stock

128MB Optical	$ 15	10 Blank CD's	$ 79
230MB Optical	$ 25	112M Tape	$ 15
1.3GIG Optical	$ 85	160M Tape	$ 18

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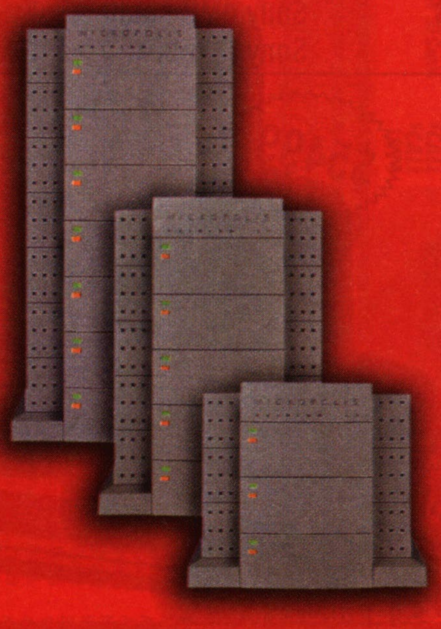

MICROPOLIS MICRODISK LT & LS

THE STACKABLE, REMOVABLE DRIVE SUBSYSTEM

MODEL #	CAPACITY
MDLT2100/AV	2.1 GB
MDLT4300/AV	4.3GB
MDLS9100/AV	9.1GB

NOW AVAILABLE IN FAST/WIDE CONFIGURATION.

CALL FOR LATEST PRICING AND CONFIGURATION.

HARD DRIVES

ALL DRIVES ARE PREFORMATTED, TESTED AND PACKAGED WITH SCSI MANAGER 4.3 COMPATIBLE DRIVERS. EXTERNAL DRIVES INCLUDE CHOICE OF 25-50 OR 50-50 PIN CABLE.

Capacity	Model No.	Mechanism	Seek	Warranty	Internal	PHASER-I
540 MB	DT-540LT	Quantum	11ms	2 yrs	$185	$260
730 MB	DT-730LT	Quantum	11 ms	2 yrs	$185	$260
1.0 GB	DT-1080FB	Quantum	11ms	3 yrs	$279	$354
1.05 GB	DT-31230	Seagate - NEW LOW PRICE!	9.0 ms	5 yrs	$380	$455
2.0 GB	DT-4221	Micropolis - NEW LOW PRICE!	8.0 ms	5 yrs	$715	$790
2.0 GB	DT-32150	Quantum -Atlas	8.5 ms	5 yrs	$895	$970
2.0 GB	DT-2490	Hewlett Packard	9.0 ms	5 yrs	$1,100	$1,185
2.1 GB	DT-32550	Seagate Barracuda IILP	8.0 ms	5 yrs	$825	$899
4.3 GB	DT-3243	Micropolis - NEW LOW PRICE!	8.5 ms	5 yrs	$1,075	$1,150
4.3 GB	DT-15150	Seagate Barracuda- NEW LOW PRICE!	8.0 ms	5 yrs	$1,280	$1,355
4.3 GB	DT-4280	Quantum	8.0 ms	5 yrs	$1,099	$1,175
9.0 GB	DT-1991	Micropolis - NEW LOW PRICE!	12 ms	5 yrs	$2,095	$2,195
9.0 GB	DT-410800	Seagate Elite 9- NEW LOW PRICE!	11 ms	5 yrs	$2,095	$2,195

AUDIO/VIDEO TUNED DRIVES

Capacity	Model No.	Mechanism	Seek	Warranty	Internal	PHASER-I
1.05 GB	DT-31230AV	Seagate	9 ms	5 yrs	$380	$455
2.0 GB	DT-4221AV	Micropolis- NEW LOW PRICE!	8.5 ms	5 yrs	$765	$840
2.1 GB	DT-32550AV	Seagate Barracuda	8.0 ms	5 yrs	$825	$899
4.3 GB	DT-3243AV	Micropolis - NEW LOW PRICE!	8.5 ms	5 yrs	$1,125	$1200
4.3 GB	DT-15150AV	Seagate Barracuda	8.0 ms	5 yrs	$1,280	$1,355
9.0 GB	DT-1991AV	Micropolis - NEW LOW PRICE!	12 ms	5 yrs	$2,195	$2,295
9.0 GB	DT-410800AV	Seagate Elite 9- NEW LOW PRICE!	11 ms	5 yrs	$2,095	$2,195

FAST/WIDE SCSI DRIVES

MOST EFFECTIVE WHEN COMBINED WITH A FAST/WIDE ATTO BOARD. CALL FOR SPECIAL CONFIGURATIONS!

Capacity	Model No.	Mechanism	Warranty	Internal	PHASER-I
2.1 GB	DT-32550W	Seagate Barracuda 2LP Wide	5 yrs	$985	$1,085
2.1 GB	DT-4221W	Micropolis 4221Wide	5 yrs	$845	$999
4.3 GB	DT-15150W	Seagate Barracuda 4 Wide	5 yrs	$1,339	$1,499
4.3 GB	DT-3243W	Micropolis 3243Wide	5 yrs	$1,199	$1,350
9.0 GB	DT-1991W	Micropolis 1991Wide	5 yrs	$2,285	$CALL
9.0 GB	DT-1991AVW	Micropolis 1991AVWide	5 yrs	$2,385	$CALL
9.0 GB	DT-410800W	Seagate Elite 9 Wide	5 yrs	$CALL	$CALL

DISK ARRAYS/RAID

MEDIA 100 * RADIUS * DIGITAL VIDEO * TARGA 2000
ARRAYS INCLUDE - ATTO CARD, REMUS & 2 FAST/WIDE DRIVES

Capacity	Model No.	Mechanism	Seek	Warranty	EXTERNAL
4.0 GB	DT-32550W-2	Seagate - Fast/Wide Barracuda 2LP (2)	8.0 ms	5 yrs	$CALL
8.0 GB	DT-3243WAV	Micropolis - Fast/Wide 3243AV (2)	8.0 ms	5 yrs	$CALL
18.0 GB	DT-1991WAV	Micropolis - Fast/Wide 1991AV (2)	8.0 ms	5 yrs	$CALL
CALL FOR MORE INFORMATION ON DIRECTTECH DISK ARRAYS!					
ATTO Silicon Express IV		Nubus Fast/Wide Accelerator			$CALL
ATTO Express PCI		Dual Channel - PCI -Fast/Wide			$CALL
ATTO Express PCI		Single Channel - PCI-Fast/Wide			$CALL

SYQUEST

INCLUDES ANUBIS FORMATTING SOFTWARE AND ONE CARTRIDGE

Capacity	Model No.	Internal	PHASER-I
88 MB	SQ5110C	$305	$365
200 MB	SQ5200	$420	$480
270 MB	SQ3270	$420	$470

CD ROM RECORDABLE

JVC Personal Archiver (2X)	$1,165
JVC Personal Archiver (4X)	$2,499

JVC External CD Recorders include cables, terminator, 2 Blank CD's and Software.

NEW JVC PRICING

TAPE

INCLUDES A FREE COPY OF RETROSPECT AND ONE TAPE

Capacity	Model No.	Format	PHASER-I
2 GB	HP-35470	4mm	$950
4-8 GB	Sony-5000	DDS-2	$999
4-8 GB	HP-1533A	DDS-2	$1,299
5-10 GB	Exabyte-8505	8mm	$2,199
15-30 GB	DLT-2000XT	DLT	$4,399

OPTICAL

INCLUDES ANUBIS FORMATTING SOFTWARE AND ONE CARTRIDGE

Capacity	Model No.	Seek	PHASER-I
230 mb	Fujitsu	30 ms	$675
1.3 GB	HP-C1716	23 ms	$2,099
1.3 GB	Maxoptix T-III	18 ms	$2,199

MEDIA

Type	Price
Syquest 44	$40
Syquest 88	$46
Syquest 105	$54
Syquest 200	$76
Syquest 270	$60
Optical 128 MB	$22
Optical 230 MB	$30
Optical 1.0 GB	$100
Optical 1.3 GB	$90

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Seagate
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Quantum
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JVC

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Government, Corporate, and University P.O.s welcome!

- ● 30-day money-back guarantee on all drives.
- ● Refused orders subject to restocking fee.
- ● RMA No. required for all returns.

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- No surcharge on credit cards•
- Corporate & Government PO's welcomed
- No sales tax collected for most states

All drives are formatted and come with ALL cables. JUST PLUG AND PLAY

Quantum

365 MB Lightning	11 ms Seek	4500 RPM	128K Buffer	2 Year Warranty	$135	$195
535 MB *Performance !*	9 ms Seek	5400 RPM	512K Buffer	5 Year Warranty	195	270
540 MB Fireball	11 ms Seek	5400 RPM	128K Buffer	3 Year Warranty	185	245
730 MB *Value!*	11 ms Seek	5400 RPM	128K Buffer	2 Year Warranty	185	245
850 MB *Value!*	11 ms Seek	5400 RPM	128K Buffer	2 Year Warranty	205	265
1080 MB Fireball	11 ms Seek	4500 RPM	128K Buffer	3 Year Warranty	275	335
2.2 GB Capella	8.5ms Seek	5400 RPM	1024K Buffer	5 Year Warranty	675	735
2.0 GB Atlas	8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	785	845
4200 MB Grand Prix	8.6 ms Seek	7200 RPM	512K Buffer	5 Year Warranty	985	1095
4.3 GB Atlas	8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	1075	1135

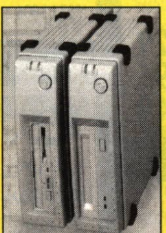
IBM

IBM drives utilize IBM's advanced Magneto-Resistive(MR) disk technology which increases the amount of data stored per disk surface and reduces the number of disks and heads making the IBM series more slim-lined , reliable & Faster

540 MB	9 ms Seek	5400 RPM	128K Buffer	5Year Warranty	$185	$245
1.2 GB DeskStar	11 ms Seek	4500 RPM	512K Buffer	5 Year Warranty	265	325
2.2 GB UltrStar	8.5ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	755	815
4.3 GB UltrStar	8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	1355	1405
5.3 GB UltrStar	8ms Seek	5400 RPM	1024K Buffer	5 Year Warranty	Call	Call

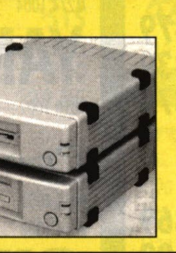
SyQuest TECHNOLOGY

Capacity	Model	Seek	External
88 MB	SQ5110C	20 ms	$345
135MB	SQEZ135	13.5ms	225
200 MB	SQ5200	18 ms	395
270 MB	SQ3270	13.5 ms	405



Genuine SyQuest Media

Capacity	Model	Price
44 MB	SQ400	$40
88 MB	SQ800	45
105 MB	SQ310	34
135 MB	SQ135	19
200 MB	SQ2000	70
270 MB	SQ327	58



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New!
PowerStor™ Cabinets
PowerStor™
ProDirect

- PowerStor™ active termination with the flip of a switch.
- 5 Year 24 Hour Replacement Warranty
- Optional Fixed Daisy Chain Connector... Puts an end to your cable nightmares
- On/Off switch Conveniently located on the FRONT of our cabinet.

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Quantum 535 MB QTB535, 5400RPM, 9ms seek, 512K cache, 5 year warranty	*$195*	*$255*
Conner 1.2 GB Conner 1060, 5400RPM, 9 ms seek, 5 year warranty	*$285*	*$345*
Fujitsu 2.1GB F2915s, 7200RPM, 9ms seek, 5 year warranty	*$685*	*$745*
Quantum Grand Prix 4.0GB Q34301, 7200, 8.6ms seek, 512K cache, 5 year warranty	*$985*	*$1040*
Seagate 9.0GB ST410800, 5400RPM, 11ms seek, 512K cache, 5 year warranty.	*$2099*	*$2199*

90 Day Performance Guarantee on all ProDirect Hard Drives... Call !

FUJITSU

530 MB	9 ms Seek	4500 RPM	256K Buffer	3 Year Warranty	$175	$235
1.2 GB	11 ms Seek	5400 RPM	512K Buffer	3 Year Warranty	285	345
2.1 GB	8.5ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	685	745
4.2 GB	8ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	1075	1135

Powerbook Drives

256 MB *Quantum Daytona*	17 ms Seek	4500 RPM	128K Buffer	1 Year Warranty	195
341 MB *Quantum Daytona*	17 ms Seek	4500 RPM	128K Buffer	1 Year Warranty	245
514 MB *Quantum Daytona*	17 ms Seek	4500 RPM	128K Buffer	1 Year Warranty	295
540 MB IBM TravelStar	12 ms Seek	4900 RPM	128K Buffer	1 Year Warranty	285
850 MB IBM TravelStar	12 ms Seek	4900 RPM	128K Buffer	1 Year Warranty	Call
1.2 GB IBM TravelStar	12 ms Seek	4900 RPM	128K Buffer	1 Year Warranty	Call

PCI & Nubus SCSI Accelerators

Atto

Silicon Express 2 — *$295*

SCSI1 & 2 support,transfer rates up to 10.0 MB/sec,supports multiple block sizes,takes advantage of parallel processing capability by transferring data directly between the Mac RAM and the SCSI bus! Ideal for graphic design,multimedia applications,software design, and more!

Silicon Express 4 — *795*

Fast/Wide (16Bit) SCSI-2 accelerator card for Apple's Nubus based computers. Supports Fast/Wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec., and fast SCSI-2 (8 Bit) transfer rates up to 10MB/sec. Full 16 Bit WIDE support for the latest drives and disk arrays . Fully compatible with all existing SCSI-1 drives . Formatting software is included. 5 Year Warranty.

Express PCI — **335**

single channel, RISC based, PCI to Fast/Wide SCSI-3 accelerator card for Apple's PCI based computers. Ideal solution for your audio, video, prepress, and real time applications. Transfer rates up to 20MB/sec. Formatting software is included. 5 Year Warranty.

Remus RAID Software — **195**

Need speed? Double it with Remus Limited software....Ideal for AV applications. Call for details...Remus Full software also available.

Customized PLUG & PLAY RAID Solutions available for all music and video editing programs. All Hard Drive firmware revisions compliant per manufactures specification Call one of our AV consultants to build one today. Best Price... Always!

ProDirect, Inc. 6824 Washington Avenue South, Eden Prairie, MN 55344

Seagate

1.2 GB Hawk	9 ms Seek	5400 RPM	512 KBuffer	5 Year Warranty	$385	$445
2.4 GB Hawk	9 ms Seek	5400 RPM	512K Buffer	5 Year Warranty	785	845
2.5 GB Barracuda 2	8 ms Seek	7200 RPM	1024K Buffer	5Year Warranty	855	915
4.3 GB Barracuda 4	8 ms Seek	5400 RPM	1024K Buffer	5 Year Warranty	1275	1335
2.5 GB Fast & Wide Barracuda 2	8 ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	935	1035
4.3 GB Fast & Wide Barracuda 4	8 ms Seek	7200 RPM	1024K Buffer	5 Year Warranty	1345	1445
9.0 GB Elite	11 ms Seek	5400 RPM	512K Buffer	5 Year Warranty	2099	2199
9.0 GB Fast & Wide Elite	11 ms Seek	5400 RPM	512K Buffer	5 Year Warranty	2195	2325

90 Day Performance Guarantee on all ProDirect Hard Drives... Call

MICROPOLIS

Capacity	Int.	Ext
2.1 GB • *Also Available in Fast & Wide SCSI 2* **Fast SCSI 2•** 8 ms Seek 7200 RPM 512K Buffer 5 Year Warranty	779	839
4.3 GB • *Also Available in Fast & Wide SCSI 2* **Fast SCSI 2•** 8 ms Seek 7200 RPM 512K Buffer 5 Year Warranty	1060	1140
9.0 GB • *Also Available in Fast & Wide SCSI 2* **Fast SCSI 2•** 11 ms Seek 5400 RPM 512K Buffer 5 Year Warranty	2095	2195

GOLD Series AV Drives Recommended most for AV work

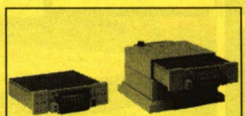
2.1 GB • *Also Available in Fast & Wide SCSI 2* **Fast SCSI 2•** 8.5 ms Seek 7200 RPM 512K Buffer 5 Year Warranty	839	899
4.3 GB • *Also Available in Fast & Wide SCSI 2* **Fast SCSI 2•** 8.5 ms Seek 7200 RPM 512K Buffer 5 Year Warranty	1170	1230
9.0 GB • *Also Available in Fast & Wide SCSI 2* **Fast SCSI 2•** 11ms Seek 5400 RPM 512K Buffer 5 Year Warranty	2199	2229

All Micropolis hard drives are covered by a 5 year advance replacement warranty. If at anytime during the warranty period your drive should fail it can be replaced in 24 hours. NO WAITING FOR REPAIRS!

MICRODISK LT *3.5"Stackable Disk Subsystems, Super Capacity External Storage*

MDAV2100	**2.1 GB**
MDAV4300	**4.3 GB**
MDAV9100	**9.1 GB**

Fast & Wide Configurations are also available



Tape Backup Drives

Retrospect 3.0 and 1 tape included with all ProDirect tape drives.

BACKUP RETROSPECT DANTZ

HEWLETT PACKARD

Capacity	Model	Media	Int.	Ext.
2.0 GB	35470	4mm	$925	$985
3-5 GB	35480	4mm	995	1055
4-10 GB	1533A	4mm	1235	1295
24-60 GB	1553A Auto Tape Loader		3195	3295

CONNER

Capacity	Model	Media	Int.	Ext.
2-4 GB	CTD4004	4mm	739	779
4-8GB	CTD8000	4mm	939	989
20-50 GB	4586 Auto Tape Loader		2095	2195

Exabyte

Capacity	Model	Media	Int.	Ext.
2-5 GB	8205XL	8mm	$1395	$1485
7-14 GB	8505XL	8mm	2055	2115

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

$269

Quantum LIGHTNING 730MB

Internal Fireball
C109 1202

FIREBALL 1GB

12ms Access Time
5400RPM

11ms Access Time - 4500RPM
Internal Lightning C109 1154

BEST BUY

$189

$999

Quantum GRANDPRIX 4.3GB

BEST BUY

7200 RPM

MacUser
October 1995

Internal Grand Prix
C109 1159

$369*

ClubMac 200MB Removable

FEATURING SyQuest REMOVABLE TECHNOLOGY

200MB

C109 1222

*Cartridge sold separately.

$234⁹⁵ **SyQuest® EZ135 Drive**

FEATURING SyQuest REMOVABLE TECHNOLOGY

S198 2001

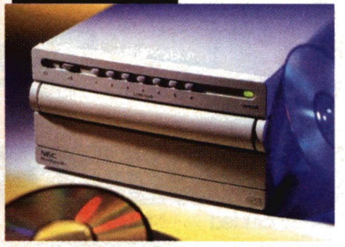
IN STOCK

Features:
SCSI Interface
13.5ms Access Time
One Free Cartridge
TWO Year Warranty

135MB

$339 N024 1070

NEC



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7 Disc-Changer
Load 7 Discs at a time!

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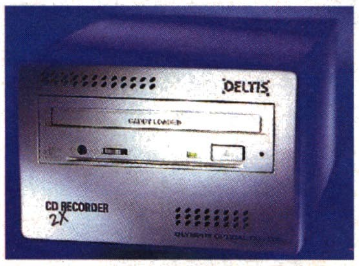
OLYMPUS
OLYMPUS IMAGE SYSTEMS, INC.

0066 1003

DELTIS CD-R2
2X CD Recordable

Features:
1MB Buffer
Gear Software
ONE Year Warranty



Source Code
65186

ClubMac®

1-800-258-2622

CLUBMAC HARD DRIVES

Quantum

		Internal/External	Internal/External
730MB Lightning	BEST BUY	C109 1154/C109 1102	$189/$249
850MB TrailBlazer		C109 1206/C109 1207	$219/$279
1080MB Fireball		C109 1202/C109 1203	$269/$329
2200MB Capella		C109 1213/C109 1212	$669/$729
4300MB Grand Prix	BEST BUY	C109 1159/C109 1108	$999/$1059
4300MB Atlas		C109 1122/C109 1021	$1229/$1289

Seagate

2.4GB Hawk 2 LP 32430N	C109 2211/C109 2112	$739/$799
4.3GB Hawk 4 15230N	C109 2212/C109 2113	$999/$1059
2.5GB Barracuda 2 LP 32550N	C109 2203/C109 2109	$889/$949
4.3GB Barracuda 4 15150N	C109 2207/C109 2106	$1379/$1479
5.25" Full Height		
9.1GB Elite-9 410800N	S020 1014/C109 2110	$2299/$2399

CLUBMAC 2.5" DRIVES

Quantum

341MB Daytona	BEST BUY	C109 1020/C109 1119	$179/$299
514MB Daytona		C109 1021/C109 1109	$249/$369
810MB Europa IDE		C109 1022	$429 Internal
1080MB Europa IDE		C109 1023	$499 Internal

CLUBMAC FAST AND WIDE DRIVES

Seagate

	Internal/External	Internal/External
2.1GB Barracuda 2LP ST32150W	C109 2214/C109 2215	$959/$1059
4.3GB Barracuda 4 ST15150W	C109 2206/C109 2208	$1399/$1499
9.1GB Elite 9 ST410800W	C109 2220/C109 2222	$2379/$2499

Quantum

2.2GB Capella VP32210SW	C109 2219/C109 2217	$699/$799
4.3GB Grand Prix XP34301SW	C109 2216/C109 2218	$1029/$1129

Fast and Wide Controllers

adaptec

A024 1006	PowerDomain AHA 2940W SCSI Accelerator	$299
A029 1001	Adaptec Remus 1.3 (Raid Levels 1, 4, 5)	$439

FWB incorporated

F094 1033	SCSI JackHammer PCI	$389
F094 1002	SCSI JackHammer NuBus	$459

QLogic

Q010 1008	Fast!SCSI MAC PCI-N for Fast SCSI-2 (10 MB/sec) connectivity	$229
Q010 1009	Fast!SCSI MAC PCI-W for Fast/Wide SCSI (20 MB/sec) connectivity	$295
Q010 1010	Fast!SCSI MAC PCI-D for Fast/Wide SCSI where longer I/O cables required	$449

CD-ROM READERS

NEC

		Access time	Trans Rate	
N024 1062	MultiSpin 6Xe CD-ROM Reader	150ms	900k/sec.	$479
N024 1070	MultiSpin 4Xc 7 Disc Changer	350ms	600k/sec.	$339
N024 1011	MultiSpin 3Xp plus CD-ROM Reader	240ms	500k/sec.	$379

ClubMac®

		Access time	Trans Rate	
C109 9555	ClubMac Six-Speed CD-ROM Drive	145ms	900k/sec.	$369
C109 9546	ClubMac Quad-Speed CD-ROM Drive	140ms	600k/sec.	$199
C109 9700	ClubMac Nakamichi 2X 7 CD-Changer	380ms	300k/sec.	$149
C109 9550	ClubMac Dual-Speed CD-ROM Drive	350ms	300k/sec.	$88⁸⁸

REMOVABLE DRIVES

ClubMac® SyQuest®

C109 1222	ClubMac 200MB 5.25" Removable*	$369
C109 1221	ClubMac 88MB 5.25" Removable* BEST BUY	$199
C109 1224	ClubMac 270MB 3.5" Removable*	$375
C109 1223	ClubMac 105MB 3.5" Removable	$149
S198 2001	SyQuest EZ135 135MB 3.5" Removable	$234⁹⁵

*Cartridge not included

SyQuest Media

Part Number	Media	Qty 1	Qty 10	Qty 20
S198 1010	44MB	$42ea	$41ea	$40ea
S198 1011	88MB	$47ea	$46ea	$45ea
S198 1012	200MB	$75ea	$73ea	$71ea
S198 1013	105MB	$35ea	$34⁵⁰ea	$34ea
S198 1014	270MB	$60ea	$59ea	$58ea
S198 2010	EZ135MB	$19⁹⁹ea	$19ea	$18⁵⁰ea

iomega

I044 1010	Zip drive with One 100MB cartridge	$199⁹⁹
I040 1006	Zip Cartridge (100MB)	$19⁹⁹
I040 1011	Zip Cartridge (3 pack)	$49⁹⁵

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C109 5039	ClubMac 2.0GB ThunderDAT Drive	$749
C109 5000	ClubMac 4-8GB DDS-2 DAT Drive	$899
C109 4301	ClubMac 4-8GB DDS-2 SuperDAT Drive	$1199
C109 2042	ClubMac 2-4GB SCSI MiniCartridge Drive	$499
S100 1043	Sony QW3080XLF QIC/WIDE 2-4GB Cartridge	$29
C109 1236	ClubMac 40GB DLT Subsystem DLT 4000	$5799
Q034 1021	1/2 inch media for DLT 2000	$39
Q034 1022	1/2 inch media for DLT 4000	$99

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C109 5022	ClubMac 5.25" Olympus 1.3GB Optical	$1399
C109 5020	ClubMac 3.5" Olympus 230MB Optical	$459

'TORAY'
Optical Storage Solutions

T140 1001	TORAY Phasewriter DUAL™ PD CD/Optical	$649
T140 2001	TORAY PDM-650 Media (ZCAV 650MB)	$59

PINNACLE MICRO
THE OPTICAL STORAGE COMPANY

P074 1005	Apex 4.6GB Optical w/One Cartridge	$1589
P074 1006	Apex 4.6GB 1024K Media	$189

CD RECORDABLE DRIVES

MICROBOARDS of AMERICA

M274 1001	PlayWrite 2X 2000 CDR w/Gear Standard	$1245
M274 1002	PlayWrite 2X 2000 CDR w/Gear Multimedia	$1289
M274 1003	PlayWrite 4X 4000 CDR w/Gear Standard	$2599
M274 1004	PlayWrite 4X 4000 CDR w/Gear Multimedia	$2689

YAMAHA®

Y010 1002	Yamaha 4X CD Recorder w/Toast CD Mastering software	$2799

PINNACLE MICRO
THE OPTICAL STORAGE COMPANY

P074 1001	RCD-1000 Recordable CD System w/ Toast software	$1429
P074 1008	RCD-5020 Recordable CD System w/ Pinnacle software	$1429

OLYMPUS
OLYMPUS IMAGE SYSTEMS, INC.

0066 1003	DELTIS CD-R2 2X CD Recordable w/Gear software	$1299

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- External drives include a Double Shielded, twisted pair 25-50 SCSI cable.
- ClubMac honors all original equipment manufacturers warranties. ClubMac will repair or replace drives at it's discretion. Drives returned within first 30 days of purchase are replaced with a new unit.
- All ClubMac hard drives include a 30 day money back guarantee. Your risk is the cost of shipping.

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R016 1030	Radius PrecisionView 17 Display	$899
R016 1031	Radius PressView 17•SR Display System	$1999
R016 1009	Radius Intellicolor Display/20e	$1995
R016 1033	Radius MultiView 21 Display	$1799
R016 1032	Radius PrecisionView 21Display	$2299
R016 1034	Radius PressView 21•SR Display System	$3149

NEC THREE YEAR 3 WARRANTY

N026 1015	NEC 15" MultiSync XV15+	$449
N026 1022	NEC 17" MultiSync XV17+	$739
N026 1009	NEC 17" MultiSync XP17	$1049
N026 1010	NEC 21" MultiSync XE21	$1779
N026 1011	NEC 21" MultiSync XP21	$2159

SONY.

S106 1021	Sony Multiscan Trinitron 15SX-1	$459
S106 1017	Sony Multiscan Trinitron 15SF-2	$519
S106 1018	Sony Multiscan Trinitron 17SF-2	$915
S106 1019	Sony Multiscan Trinitron 17SE-2T	$1099
S106 1020	Sony Multiscan Trinitron 20SF-2	$1855

Portrait Display Labs — MANUFACTURER'S 30 DAY MONEY BACK GUARANTEE

P026 1003	Portrait/Pivot 1700 .26 Dot Pitch	$1049
P026 1004	Portrait/Pivot 1700 .28 Dot Pitch	$989

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radius

R013 1042	Radius Thunder II GX 1152	$399
R013 1039	Radius Thunder II GX 1600	$699
R013 1059	Radius Thunder IV GX 1600	$1989
R013 1061	Radius Thunder IV GX 1152	$1589
R013 1069	Radius PrecisionColor 8/1600 PCI Card	$479
R013 1070	Radius Thunder 30/1152 PCI Card	$799
R013 1071	Radius Thunder 30/1600 PCI Card	$1189
R013 1072	Radius ThunderColor 30/1152 PCI Card	$1569
R013 1073	Radius ThunderColor 30/1600 PCI Card	$1999
R013 1018	Radius VideoVision Studio 2.5.1	$1999
R013 1026	Radius Spigot Power AV	$599

ATI TECHNOLOGIES INC.

A143 1010	ATI XCLAIMGA 2MB PCI Graphics Card	$359
A143 1009	ATI XCLAIMGA 4MB PCI Graphics Card	$469

TRUEVISION

T040 1001	Targa 2000N (NuBus)	$3695
T043 1001	Targa 2000 (PCI Mac)	$4295

PRINTERS

HEWLETT PACKARD

H047 1030	HP LaserJet 5MP Laser Printer	$1045
H047 1039	HP DeskWriter 600 InkJet Printer	$299
H047 1033	HP DeskWriter 660C Inkjet Printer	$399
H047 1041	HP DeskJet 850C InkJet Printer	$515
H047 1042	HP DeskJet 1600CM/PS PostScript Printer	$1985
H047 1047	HP DeskJet 340 InkJet Printer	$299
H047 1048	HP Mac Adapter for DeskJet 340 InkJet Printer	$29.95

EPSON 2 WARRANTY

E047 1018	Epson Stylus Color II	$449
E047 1019	Epson Stylus Color Pro	$599

NEC

N027 1001	NEC SilentWriter Model 640	$699
N027 1006	NEC SuperScript 3000M Color Dye-Sub	$949

SCANNERS

EPSON 2 WARRANTY

E045 1003	Epson ES-1200C Pro-MAC Color Scanner	$1179
E045 1013	Epson ES-1000C MAC Scanner	$735

AGFA

A055 1011	Agfa StudioScan IIsi	$939
A055 1001	Agfa Arcus II	$2195

HEWLETT PACKARD Manufacturer's 1 Year Warranty

H045 1013	HP ScanJet 4s Personal Scanner	$345
H045 1009	HP ScanJet 4c Color/GS Scanner	$949

MICROTEK

M150 1006	Microtek Scanmaker III	$1989
M150 1026	Microtek Scanmaker E3	$459

UMAX Manufacturer's 1 Year Warranty — MANUFACTURER'S 30 DAY MONEY BACK GUARANTEE

U010 1044	Umax PowerLook Pro w/ Transparency Adapter	$1949
U010 1053	Umax Vista-S8 LE w/ Transparency Adapter	$799
U010 1038	Umax Vista-S8 Pro	$769
U010 1010	Umax Vista-S6 LE	$539

GRAPHICS TABLETS

WACOM

			w/Painter 4.0	
W010 1026	ArtPad II 4x5 with Erasing Pen	$139	W010 1033	$414
W010 1028	ArtZ II 6x8 with Erasing Pen	$298	W010 1034	$573
W010 1029	ArtZ II 12x12 with Erasing Pen	$425	W010 1035	$699
W010 1030	ArtZ II 12x18 with Erasing Pen	$695	W010 1036	$969

ACCELERATORS

DAYSTAR DIGITAL MONEY BACK 30 DAY GUARANTEE

D040 1018	DayStar Turbo 040	$699
D040 1057	DayStar 100MHZ PowerCard 601	$969
D040 1043	DayStar 100MHZ PowerPro 601	$1199
D040 1039	DayStar 66MHZ Turbo 601 for IIci	$839
D040 1048	DayStar 100MHZ Turbo 601 for IIci	$1139
D040 1050	DayStar 100MHZ Turbo 601 for IIsi	$1139
D040 1052	DayStar 100MHZ Turbo 601 for Performa, IIvx, IIvi	$1139

MODEMS

FAST MAC Manufacturer's 5 Year Warranty

B030 1007	Fast Mac V.34 28.8 Fax/Data Modem	$139

BEST DATA Merging Multmedia & Communications — Manufacturer's 5 Year Warranty

B020 1001	Best Data 2834FLXMAC 28.8 V.34 External Mac	$165
B020 1003	Best Data 2834VLXMAC 28.8 V.34 External Mac w/Voice Mail	$199

GLOBAL VILLAGE COMMUNICATION Manufacturer's 5 Year Warranty

G050 1006	TelePort Gold II	$109
G050 1016	TelePort Platinum	$199
G050 1002	PowerPort Mercury for PB 5xx	$325
G050 1019	PCMCIA 28.8KBPS Fax/Data/10BaseT Ethernet	$499
G050 1020	PowerPort Platinum PCMCIA Card 28.8kbps Fax/Data	$339

Megahertz

M070 1021	28.8Kbps PC Card modem w/XJACK®	$245
M070 1022	14.4Kbps PC Card modem w/XJACK®	$185

TDK.

T210 1001	28.8Kbps V.34 Data/Fax PCMCIA modem Card	$239

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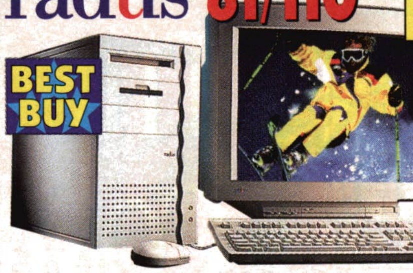
ASANTÉ ASANTE LIFETIME WARRANTY

A120 1010	10BaseT FriendlyNet Media Adapter FN10TA	$39.95
A120 1023	Thick/10BaseT MCiNB-10T	$109
A120 1003	10BaseT Hub (8 RJ45 ports, 1 AUI & 1 BNC)10THUB/8	$149
A120 1001	10BaseT Hub (12 RJ45 ports, 1 AUI & 1 BNC)10THUB/12	$275
A120 1032	ASANTÉ Micro ASANTÉPRINT 10BT	$285
A120 1054	ASANTÉ Ethernet card for Nubus 10BT	$49

radius 81/110 $1489*



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100MHz PowerPC Upgrades for the Mac IIci, IIvx, IIvi, IIsi and Performa 600

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High detailed 4800dpi, 30-bit color scanning.

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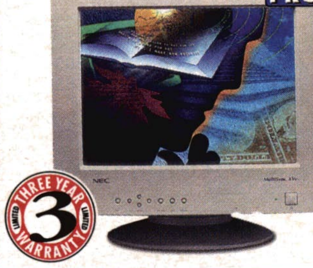

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17" Color Display

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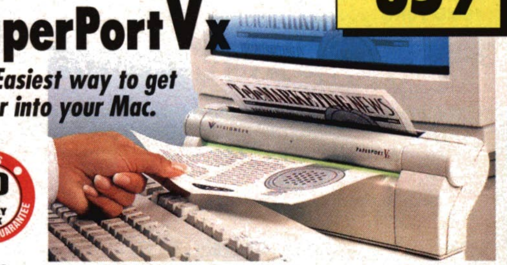

MANUFACTURER'S 30 DAY MONEY BACK GUARANTEE

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28,800 bps Modem

Manufacturer's 5 Year Warranty

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2MB 80/70NS	2000/2007	65/74
4MB 80/70NS	4000/4070	121/135
8MB 70NS	8888	315
16MB 70NS	1601	599
30-pin , 36 bit SIMMS		
1MB 70NS	9070	$45
4MB 70NS	9007	159
4MB PAL SIMMs for II,IIx		
4MB 80/70NS	4100/4107	$149/151
64-pin SIMMs for IIfx		
1MB 80/70NS	8080/8070	$43/43
4MB 80/70NS	4080/4087	155/155
8MB 70NS	N8887	365
16MB 70NS	N1680	665
72-pin SIMMs		
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8MB 70/60NS	8032/8632	227/229
16MB 70/60NS	16732/16602	428/448
32MB 60NS	32632	935
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8MB 70NS	83670	339
16MB 70NS	163670	551
32MB 70NS	323670	1221
168-pin DIMMs		
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8MB 70NS	8764	238
16MB 70NS	16764	460
32MB 70NS	32764	970
64MB 70NS	64764	2195

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32MB RAM	PB/BB-32	1159
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PB DUO-20MB MEMORY UPGRADE		785
PB DUO-28MB MEMORY UPGRADE		1172
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Centris FPU 25MHz	ST04025	$189
FPU 33MHZ DUO/P600	DUOp600 33MHz	52
FPU Color Classic 16MHZ	CLRCL 16MHz	44
LC575 33MHZ Math CoProc.	ST04033	285
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256K 80NS Video RAM	1516	$17
512K Video RAM	1500	22
256K Cache Card PM6100, 7100	PM256	107
512K Cache Card PM6100, 7100	PM512	411
1MB Cache Card PM6100, 7100	PM1MG	792
PowerMac 7200, 7500, 8500, 9500 VRAM/CACHE		
1MB VRAM PM7200/7500/8500	1517	$65
2MB Video RAM PM9500	N7VR2MB	229
256K CACHE DIMM	PMPCI256	176
512K CACHE DIMM	PMPCI512	449

SCANNERS/PRINTERS

EPSON 1200C PRO	$1202
VISIONEER PaperPortVX for Mac	365
NIKON CoolScan External	1379
NIKON Super CoolScan	1985
AGFA StudioScan IISI	935
POLAROID SPRINTSCAN	1555
UMAX	
POWERLOOK I I	$2829
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VISTA S-8 LE+	714
VISTA S-6 PRO+	698
VISTA S-6 LE+	598
APPLE	
Color Laserwriter 12/600	$6465
Laserwriter 4/600	895
Personal Laserwriter 320	809
HEWLETT PACKARD	
HP LaserJet 5L	$515
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Turbo 040i 33MHz w/Cache No FPU			609
Turbo 601 66MHz for IIci/IIsi (w/adpt)/IIvx/IIvi/P600			859
Turbo 601 100MHz for IIci/IIsi (w/adpt)/IIvx/Ivi/P600			1239
Turbo 601 100MHz IIsi W/Adpt			1239
Turbo 601 100MHz IIvx, IIvi, P600			1239
PowerCard 601 100 MHZ			959
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Allegro Mac II	33MHZ	Mac II	179
Allegro Mac IIx	33MHZ	Mac IIx, SE/30	179
Allegro SE-33	33MHZ	Mac SE	189
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Presto 040 LC	50/25MHZ	Mac LC/LCII/Perf400,405,410,430	299
Presto 040	80/40MHZ	Mac IIci, IIsi, IIx, IIcx	299
Presto 040 *(w/cache/FPU)*	80/40MHZ	Mac IIci, IIsi, IIx, IIcx	399
Presto 040	80/40MHZ	Mac IIci, IIsi, IIx, IIcx	399
Presto 040 *(w/cache/FPU)*	80/40MHZ	Mac IIci, IIsi, IIx, IIcx	499
*Presto Adapter			$59

DAYSTAR DIGITAL

POWERPRO 601
80MHZ W/RAM
CACHE
$1455

DRIVES

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730MB	345
850MB	339
1080MB	409
2GIG	925
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QUANTUM 1080 External Fireball	$349
QUANTUM 540MB External Fireball	259
QUANTUM 850MB External Trailblazer	279
QUANTUM Grand Prix 4.2GB 8.6MS	1195
QUANTUM Grand Prix 2.1GB	865
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RUMI 88MB/105MB W/CART	$375/369
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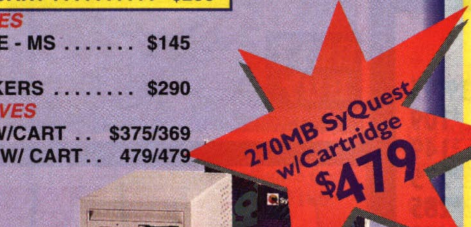

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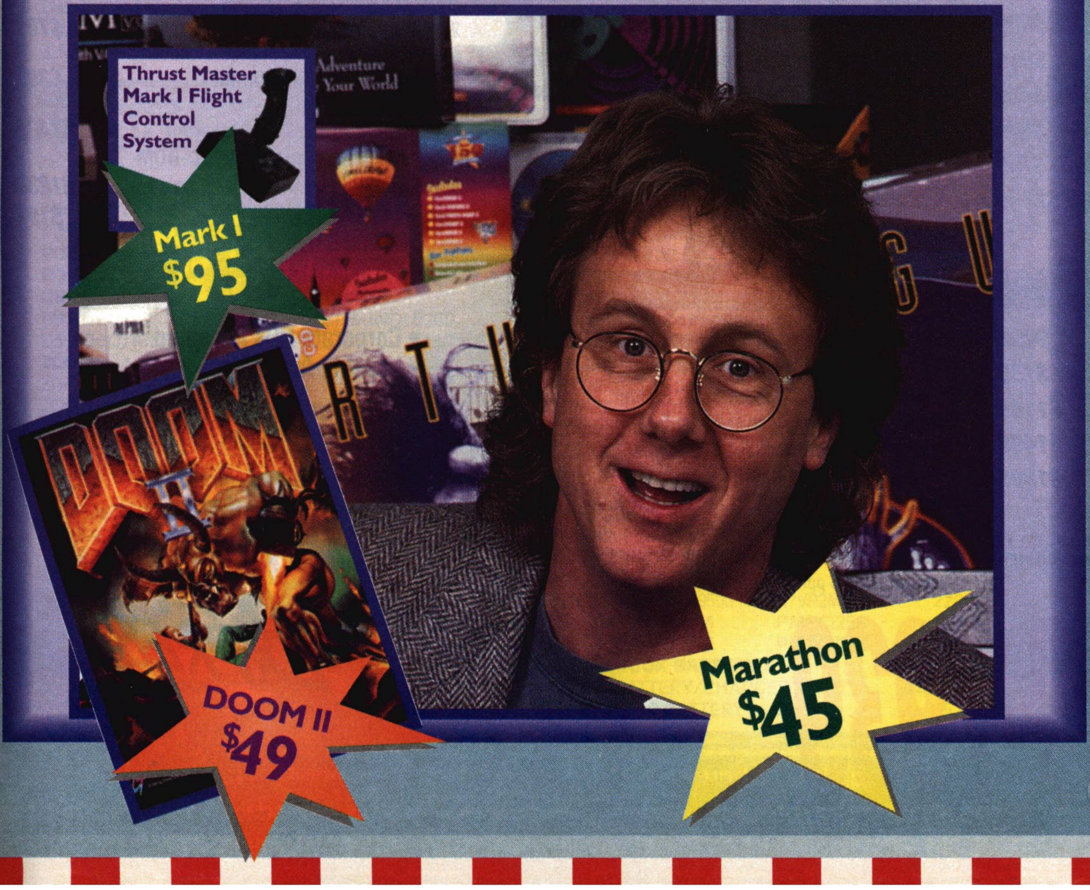

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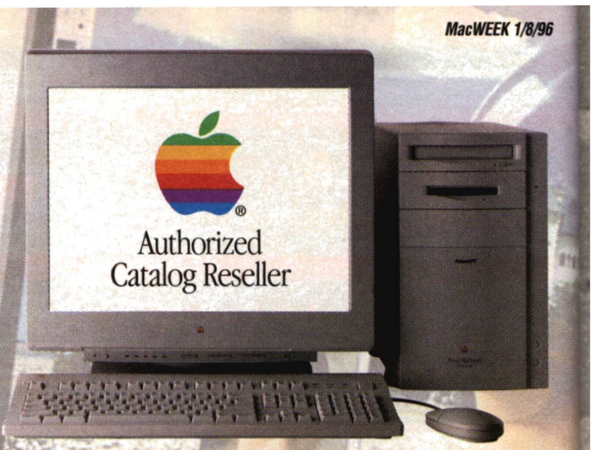

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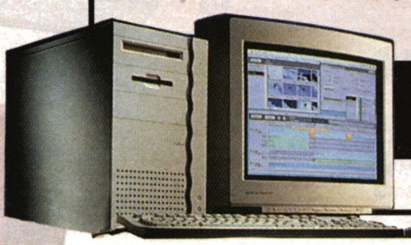

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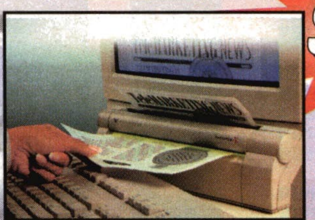

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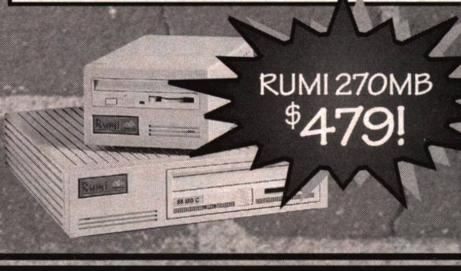

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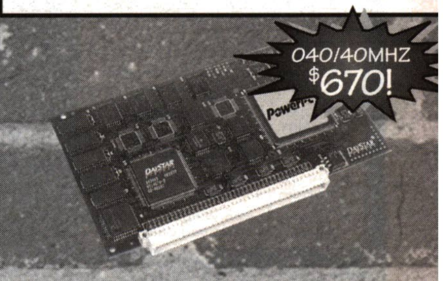

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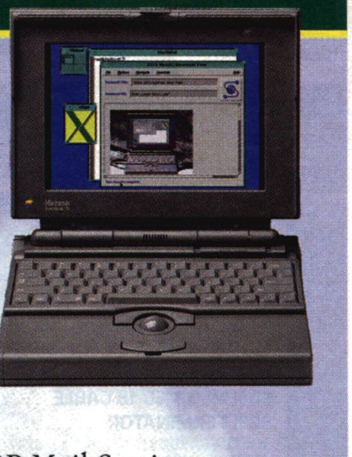

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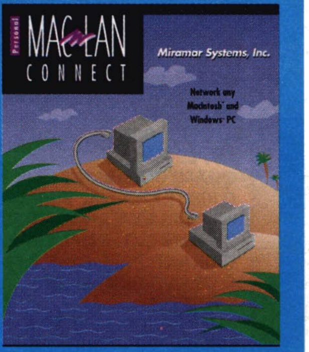

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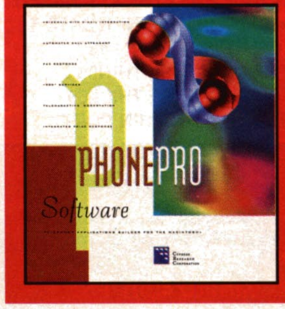

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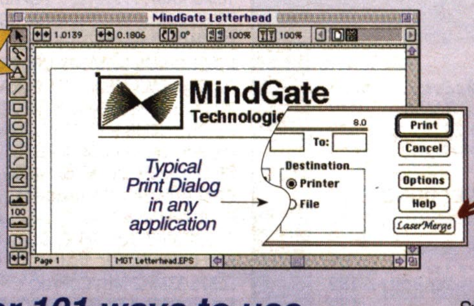

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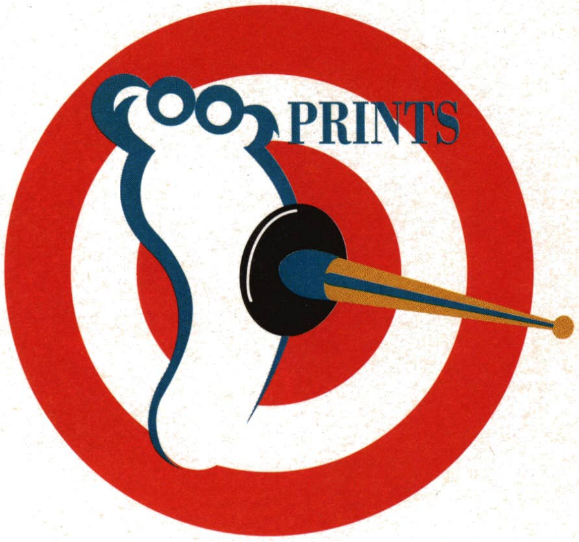

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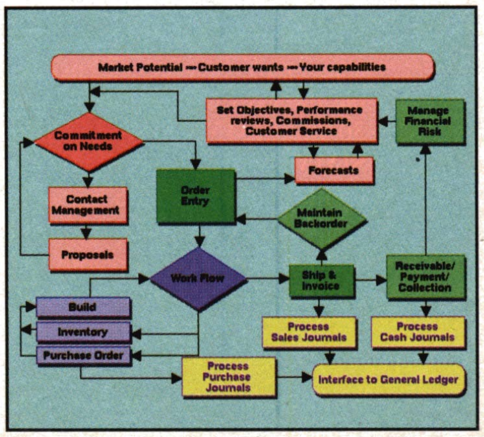

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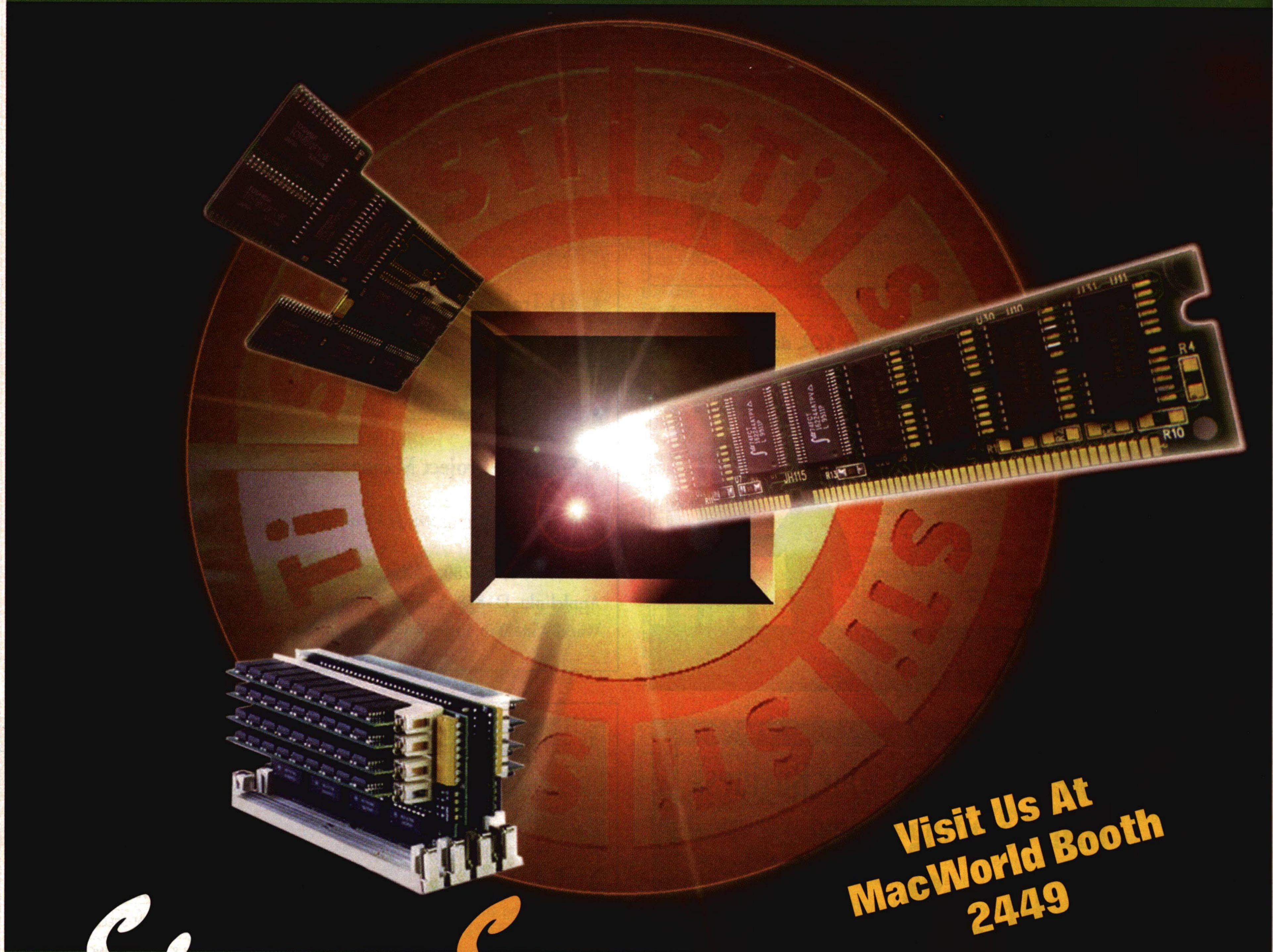

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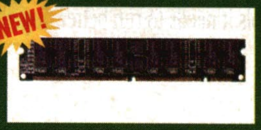

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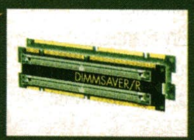

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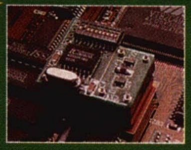

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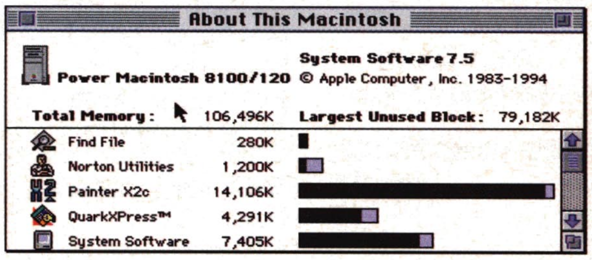
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System Software 7.5
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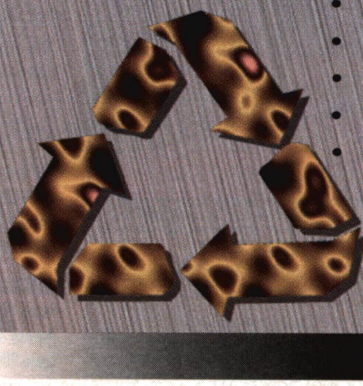

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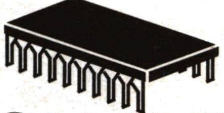

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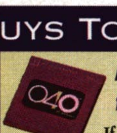

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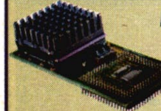

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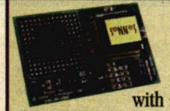

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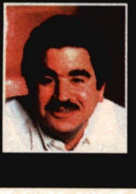

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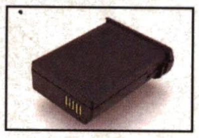

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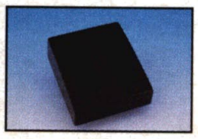

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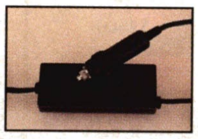

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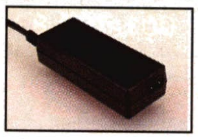

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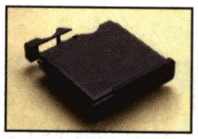

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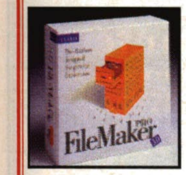

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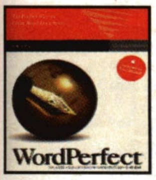

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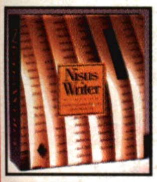

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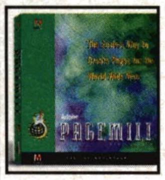

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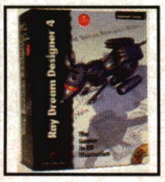

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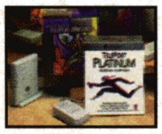

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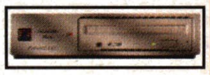

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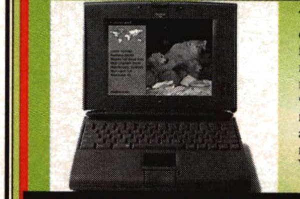

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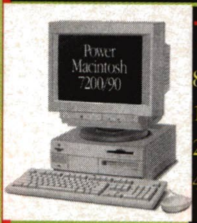

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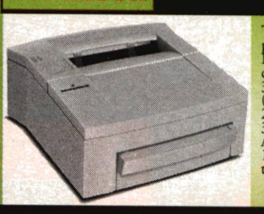


The Personal LaserWriter 320 Provides advanced print capabilities in Apple's most affordable Adobe PostScript laser printer. It's fast, quiet, energy efficient printer that's ideal for home or office use with 300 dot per inch, FinePrint ™, PhotoGrade™ (optional), 4 page per minute, 16 Mhz RISC AMD 29205 processor, 2 MB of RAM expandable to 8 MB, 39 scalable TrueType™ and PostScript™ font, Adobe PostScript level II,
100 Sheets or 15 envelopes, and manual feed paper tray .

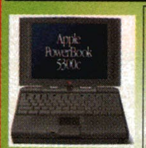
LaserWriter 320	LaserWriter4/600
$619	$799

5300cs Series

PowerBook 5300cs/100 provides the performance of PowerPC technology and long battery life in an affordable color notebook system. • Uses a 100-MHz PowerPC 603e processor •Provides a 10.4-inch (diagonal), backlit, dual-scan, color display with 256 colors•Features PC Card slots and an expansion bay, for flexibility and expandability

8MB/500HD	$2459
16MB/750HD	$3159
Mhz CruiseCard 28.8	$299
Mhz CruiseCard 14.4	$189

5300c Series



5300c/100 provides the high performance of PowerPC processor technology and long battery life in the highest-quality color PowerBook. Its advanced color display makes it ideal for work with graphics or presentations. •Provides a 10.4-inch (diagonal), backlit,active-matrix, color display with 256 or thousands of colors •Features PC Card slots and an expansion bay, for flexibility and expandability

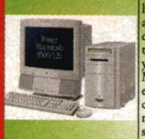
8MB/500HD	$3299
16MB/750HD	$3999
G.V 28.8 & 10-BaseT	$498
1.2GB PB HD	$698

7500 Series

7500/100 computer is a professional computer with a new architecture that offers more flexible capabilities than previous models. • 100-MHz PowerPC 601 processor, user upgradable to 604 processor•Built-in floating-point processor and 32K cache
•Three industry-standard PCI expansion slots

16/500/CD	$2469
24/1GB/CD	$3079
40/1GB/CD	$3569
64/4GB/CD	$4998

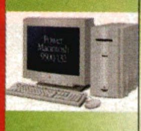
8500 Series



If your profession demands a high-performance, expandable computer that can handle any media as easily as text, 8500/120 system is for you. Featuring a new Power Macintosh architecture with even greater multimedia capabilities than previous models, the 8500/120 is the system of choice for in-house publishing, media authoring,

16/1GB/CD	$3898
24/2GB/CD	$4668
128/2GB/CD	$7858
256MB/4GB/CD	$11298

9500 Series



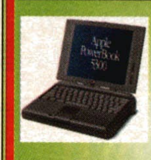
9500/120 and Power Macintosh 9500/132 are the most flexible, expandable, high performance desktop computers from Apple. The RISC based Power PC 604 processor running at 120 or 132 Mhz is exceptionally •6 industry-standard PCI expansion slots
•512k Level II Cache, 12 DIMM Slots

16/1GB/CD/120Mhz	$3799
128/2GB/CD/120Mhz	$6898
16/2GB/CD/132Mhz	$4679
64/2GB/CD/132Mhz	$5998

Monitors

Apple	
MultiScan 14	$359
MultiScan 15"	$429
MultiScan 1705	$749
MultiScan 17"	$949
1710AV	$1059
MultiScan 20"	$1899
radius	
PrecisionView 17	$969
PrecisionView 17•SR	$1989
Intellicolor 20e	$2089
MultiView 21	$1789
PrecisionView 21	$2289
PrecisionView 21•SR	$3139
SONY	
MultiScan 15sx	$439
MultiScan 15 sfII	$539
MultiScan 17 sfII	$939
MultiScan 17seII	$1089
MultiScan 20sfII	$1889
MultiScan 20se	$1989
NEC	
15" XV15"	$439
15" XE15"	$539
17" XV17"	$729
17" XE15"	$989
17" XP17"	$1039
21" XE 21"	$1769
21" XP 21"	
$2149**Portrait Display Lab**	
Portrait/Pivot 1700 .26 DPI	$1039
Portrait/Pivot 1700 .28 DPI	$979

5300 Series



The Macintosh PowerBook 5300/100 provides the high performance of PowerPC processor technology and long battery life at a great price. It's the ideal mobile system for handling word processing, spreadsheets, and communications.• Uses a 100-MHz PowerPC 603e processor
•Includes a high-capacity internal 500MB hard disk drive

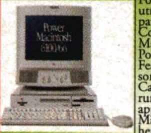
8MB/500HD	$1939
16/500/G.V28.8	$2629
Farallon AirDock	$79
PB Carrying Case	$49

190 Series

190/66 is the most affordable PowerBook computer, combining the performance of the Motorola 68LC040 processor with the convenience of a compact. It offers a host of enhanced features, including PC Card slots, an expansion bay, Apple trackpad for increased functionality, and a number of upgrade options. • Uses a 66/33-MHz 68LC040 processor •Provides a 9.5-in. (diagonal), backlit, passive-matrix, grayscale display levels of gray •Includes a high-capacity internal 500MB hard disk drive

4MB/500HD	$1629
8MB/500HD	$1739
PB 190 8-Bit Color Video	$179
Infrared Upgrade Kit	$79

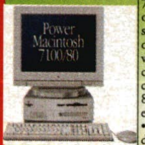
6100 Series



For users who want the utmost in power and compatibility, the DOS Compatibility Card for Macintosh can turn your Power Macintosh 6100 or Featuring a 486 DX2 processor, the DOS Compatibility Card for Macintosh lets you run DOS and Windows applications directly on the Macintosh at a fast 66 megahertz. worlds.Power PC 601/66 Mhz. Built in ethernet card and more

8MB/500/CD	$1349
24/1GB/CD	$2089
16/500/CD/DOS	$1998
72/1GB/CD	$3389

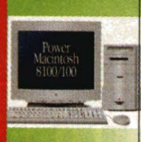
7100 Series



7100/80 provides the speed of the PowerPC 601 processor and a variety of expansion options.•Power PC 601 RISC with integrated math coprocessor and 32K on chip cache, 256K level 2 cache at 80 Mhz•8MB of RAM expandable to 136 MB
•Built in support for allApple displays•Networking ports, Ethernet•On board video and

8MB/700/CD	$1459
24MB/1GB/CD	$2298
72MB/2GB/CD	$3799
16/700/CD AV	$2049

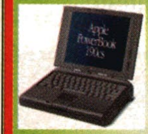
8100 Series



8100 computers set new Macintosh speed and performance standards, which is tremendous news for publishers, engineers, and multimedia professionals. • 110-MHz PowerPC 601 microprocessor, including floating-point processor and •32K cache (8100/110 only) • 80-MHz PowerPC 601 microprocessor and 32K cache
•256K level-2 cache

8100/100Mhz		8100/110 MHZ	
8/700	$1998	16/2GB/CD	$2959
24/1GB/CD	$2895	32/2GB/CD	$3509
16/1GB/CD AV	$2859	80MB/4GB/CD	$5189
16/1GB/CD av Ref	$2599	144MB/4GB/CD	$6969

190cs Series



190cs/66 is the most affordable color PowerBook computer, combining the performance of the Motorola 68LC040 processor , lightweight notebook computer. It offers a host of enhanced features, including a 10.4-inch dual-scan color display, PC Card slots, an expansion bay, an improved Apple trackpad for increased functionality•Provides a 10.4-in. (diagonal), backlit, dual-scan, color display with 256 colors•Includes PC Card slots for two Type I or II PC Cards or one Type III PC Card• Features an expansion bay for third-party solutions, such as a second hard disk drive, magneto-optical drive, or inter-

8MB/500HD	$2099
16/500/G.V28.8	$2797
4MB Upgrade	$199
8MB Upgrade	$329

SPECIALS

P630 8/250/CD Ref	$789
PB 520 4/160 Ref	$1299
PB 520 4/240$1599	
Apple 2GB 3.5" Int HD	$789
Apple PB 160 MB 2.5" HD	$79
Apple PB 320 MB 2.5" HD	$259
EZQuest PD 4x CD-ROM & 650MB Optical Storage in one external complete	$669
EZQuest MCD 540 & Syquest 270MB external kit combo	$649
Radius PrecisionColor 8XJ	$229
Radius 81/110 16/730/Cd	$1499*
Radius 81/110 16/2.0GB/CD	$2499*

*Price after $200 mfr mail in rebate

Apple Macintosh Performa

630CD 8/250/CD/KB REF	$798	5215CD 8/1GB/CD	$1849
630CD 8/250/CD	$1198	6205CD 8/1GB/CD	$1979
640CD 12/500/CD DOS	$1499	6220CD 16/1GB/CD/No Mon	$1898
6116CD 8/700/CD	$1599	6300/100 16/1.2GB/CD	$2629
6200CD 8/1GB/CD	$1848		

Bundle Software may not be the same for all Performa CPUs. Call for specific CPUs

Performa Bundle Software

Includes Apple Multiple Scan 15 Display (.28 Dot Pitch) (P631CD & P6116CD include Apple Multiple Scan 14 Display), AppleDesign keyboard,28.8K bps Fax/Modem by Global Village Communications, Inc. (with Send Fax S/W) for P6205CD and P6300CD only and 14.4K bps for other Performa computers, Quad speed CD-ROM (double speed for P631CD,P640CD, & P6116CD) , System 7.5, At Ease, eWorld by Apple Computer, Inc., ClarisWorks, Quicken, MacGallery Clip Art Treasure Pak, Click Art Performa Collection, MacLink Plus Easy Open Translators, The American Heritage Dictionary, Mangia, Virex, Expresso, Power Pete, WealthBuilder, The Writing Center, Lode Runner CD-ROM Titles Include: The 1995 Grolier Multimedia Encyclopedia, Electronic Arts 3D Atlas, My First, Incredible, Amazing Dictionary, Smithsonian's America, The Family Doctor, Club KidSoft Sampler, TIME Almanac Reference Edition, Sesame Street Numbers, Making Music by Voyager

Printers

Apple	
StyleWriter 1200	$269
ColorStyleWriter 2200	$379
ColorStyleWriter 2400	$399
LaserWriter 320PS	$599
LaserWriter 4/600	$829
LaserWriter Select360 PS$	1229
LaserWriter 16/600 PS	$2059
ColorLaserWriter12/600	$5998
Hewlett Packard	
DeskWriter 660 InkJet	$299
DeskWriter 660c InkJet	$429
DeskWriter 340 InkJet Mac	$329
DeskJet 850C InkJet	$629
DeskJet 1600CM/PS	$1985

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8MB 60ns	$289	16MB DIMM	$479	8MB UPGRADE	$329	8MB UPGRADE	$279
16MB 60ns	$499	64MB DIMM	$1889	16MB UPGRADE	$569	16MB UPGRADE	$579
32MB 60n	$989	1MB V-RAM	$79	32MB UPGRADE	$1159	32MB UPGRADE	$1089
		256K L2 Cache	$259				

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7100/80AV	16/700/CD	$1899
8100/100	8/700	$2099
8100/100	16/1GIG/CD	$2399*
8100/100AV	16/1GIG/CD	$2799
8100/110	16/2GIG/CD	$2699
7200/75	8/500/CD	$1369
7200/90	8/500/CD	$1549
8500/120	48/2GIG/CD	$4999
9500/120	16/1GIG/CD	$3499
9500/132	16/2GIG/CD	$4199

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8150 8/500/AS (80MHZ)	$2499
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650	8/230	$1399*
660AV	8/80	$899*
950	8/0 OR 8/230	$1599/1699
950	16/1GIG/CD	$2199

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5300CS	16/500	$2649
5300CS	16/750	$2949
5300C	8/500	$3149
5300C	16/750	$3699
5300CE	32/1GIG	$5699
190	8/500	$1699
190CS	8/500	$1999

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180C	4/160/Modem	$1899*
540	4/240	$1649*
540C	4/320	$2499*
540C	12/320/Modem	$2999*
520	4/160 or 4/240 or 4/240(new)	$1029*/1049*/1099
520C	4/240	$1399*
520C	4/240/Modem	$1599*
520C	12/320/Modem	$1899*

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Duo 250	4/200	$1299*
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Duo 280	12/240/Modem	$2299
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6116CD	8/700/CD w/Monitor	$1249*
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6300CD	16/1GIG/CD w/Monitor	$2499

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PRINTERS

Color LaserWriter 12/600	$5999
LaserWriter 4/600	$799
LW Personal/Selectl 300	$329*/479
LW Select 320	$599
Select 360 w/Toner	$1149
LaserWriter 16/600/PS	$1999
Portable Stylewriter	$239*
StyleWriter 1200/2200/2400	$199/399/299
StyleWriter 1200	$199*
HP DeskWriter 550C	$249*
HP LaserJet 5MP	$999
HP LaserJet 4M Plus	$1849
STAR COLOR PRINTER FOR MAC	$129

MONITORS

APPLE

14" MultiScan	$349
15" MultiScan	$379
17" MultiScan	$969
17" 1705	$749
17" 1710AV	$999
20" MultiScan	$1799

SONY

1425 14"	$299
CPD 15SFI 15"	$429
CPD 15SFII 15"	$529
17SFII 17"	$869
GDM 17SE 2T	$1049
20SE 20"	$1869

RADIUS

PrecColor 17/20	$699*/1399*
PressView 21	$1699*
Intellicolor 20I	$1199*
SuperMac 21TXL	$1599*
PrecisionView 21	$2099
MultiView 21	$1899

NEC

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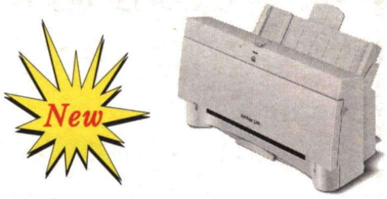

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Apple StyleWriter 2200	$350.00

Apple 15" Multiple Scan Display	$395.00
Apple 12" MonoMonitor	$129.00
Laser IIg Logic Bd (Upgrade)	$450.00
Apple Portrait Display	$375.00

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•Mac II	4/40	$250.00
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•Mac IIFX	4/80	$525.00
•Add 8 Bit Video Card		$50.00
Mac LC	2/40	$299.00
Mac LC II	4/80	$375.00
Mac LC III	4/80	$449.00
Mac IISI	5/80	$395.00
Mac IISI	5/160	$429.00
Mac IICI	4/80	$395.00
Mac IIVX	4/80	$549.00
Mac Portable	2/40	$350.00
Pwr Mac 7100/80	8/500	$1179.00
Centris 610	4/230	$575.00
Centris 650	4/230	$699.00
Centris 660AV	8/230/CD	$999.00
Quadra 700	4/80	$799.00
Quadra 800	8/500	$1195.00
Quadra 950	16/500	$1499.00
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Performa 410	4/80	$375.00
Performa 600	5/80/CD	$699.00

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Duo Dock		$349.00
Duo Floppy Adapter		$59.00
Duo Battery Recharger		$45.00
PB Battery Recharger		$35.00
PB Int. Fax/Data Mdm		$25.00
PB 14.4 Express Mdm		$79.00
PB AC Adapters		$39.00
Apple HDI-30 System Cable or SCSI Disk Adapter		$25.00

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Apple 8 Bit Video Cards	$85.00
Apple 13" RGB Display	$250.00
Apple 14" Color Plus Display	$250.00
Apple 14" Color Display	$350.00
*Apple 15" MultiScan	$339.00
Apple 16" RGB Display	$649.00
Apple 20" MultiScan Display	$1299.00
Apple Portrait Display	$199.00
Performa Display	$179.00

Printers/Peripherals

**Personal Laser LS	$279.00
LaserSelect 300	$299.00
Stylewriter	$129.00
Stylewriter II	$159.00
Portable Stylewriter	$199.00
ImageWriter II	$199.00
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Apple Color Printer	$299.00
Apple OneScanner	$249.00
Apple Color OneScanner- ($50 OFF w/CPU Purchase)	$399.00
Apple Ext. SuperDrive (1.44MB)	$149.00
Apple CD 300 Ext. Drive	$199.00
Apple HDI-20 Ext. Floppy Drive	$129.00
Apple 5.25" Drive (LC/IIe)	$79.00
Apple Design Kbd	$69.00
Apple Ext. II Kbd	$95.00
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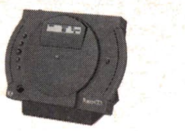

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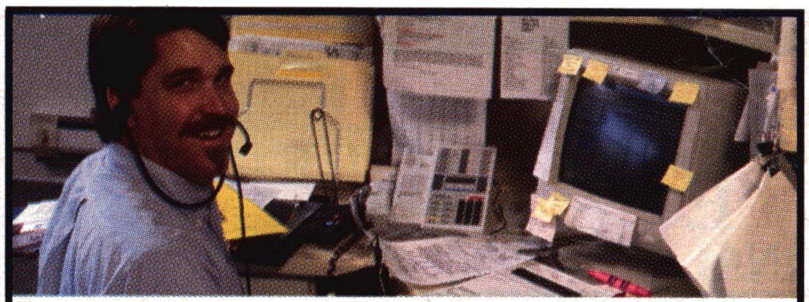

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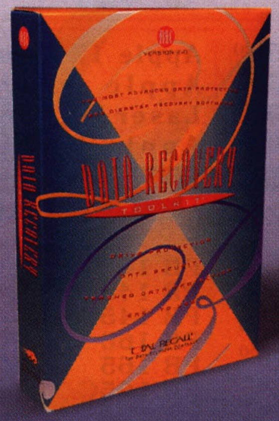

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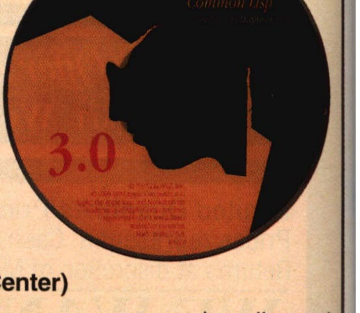

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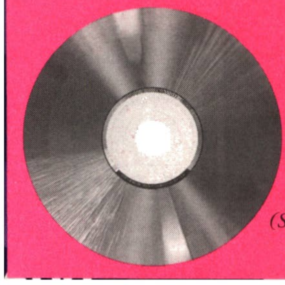

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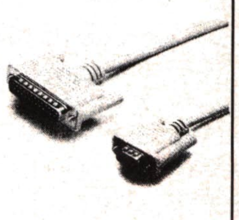

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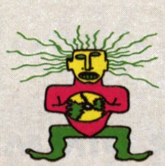

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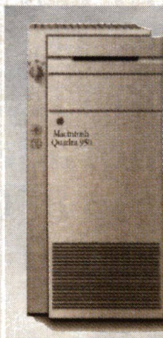

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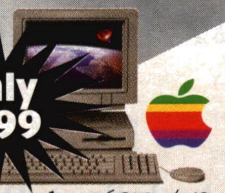

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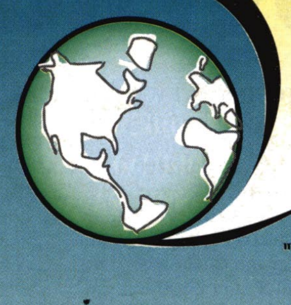

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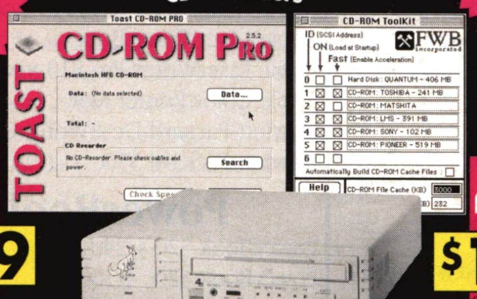
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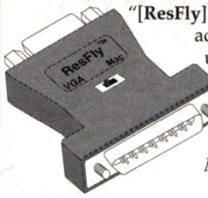
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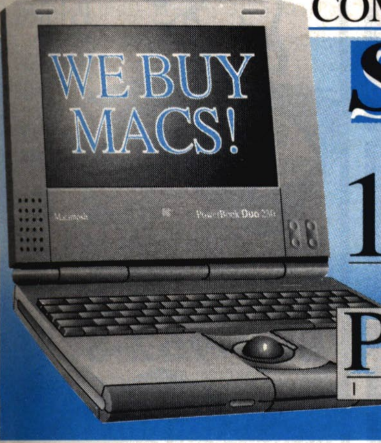

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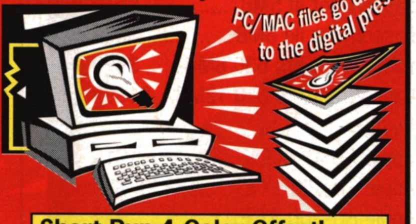

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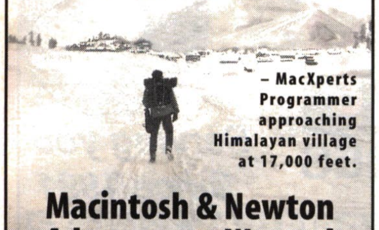

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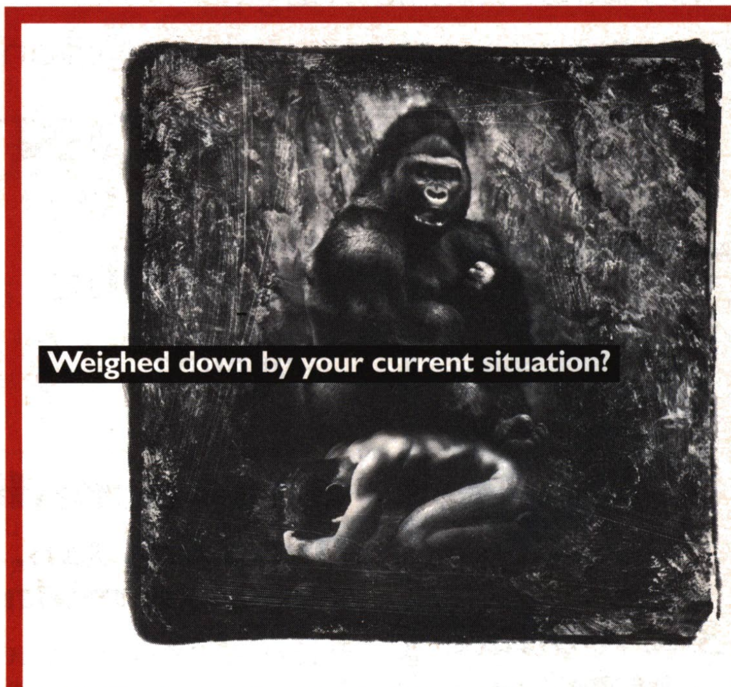

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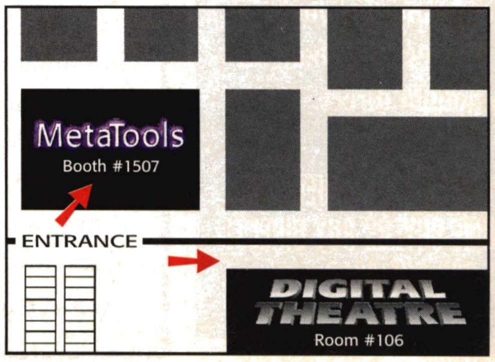

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EXPO NEWS FLASH

LIVE PICTURE 2.5

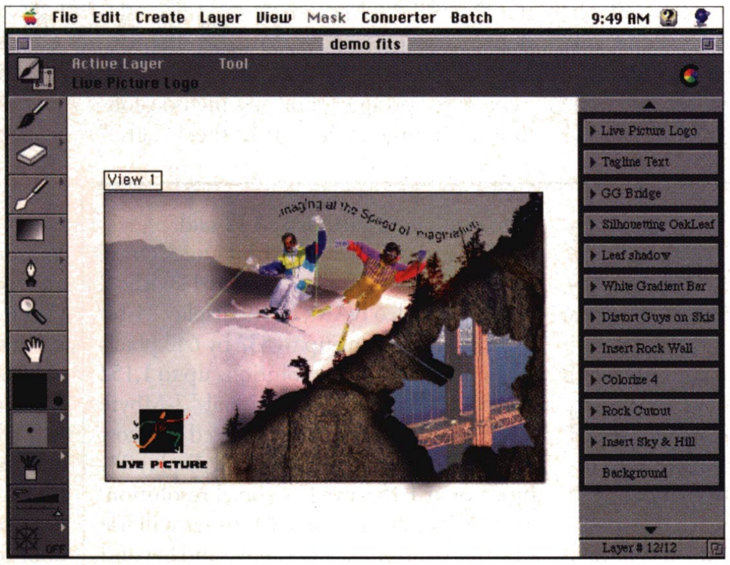
Live Picture Inc. of Soquel, Calif., will ship a new version of its image-editing program at Macworld Expo. Previously sold by MetaTools Inc., the $995 Live Picture 2.5 adds import and export of EPS files, direct support of third-party Adobe Photoshop filters, and support for Apple's ColorSync. The upgrade will let users create alpha channels and export them to TIFF, Photoshop and the company's resolution-independent IVUE format. Minimum RAM requirements are now 18 Mbytes. Upgrades are $149.95.

ISDN MODEM

Farallon Computing Inc. is showing its first personal ISDN (Integrated Services Digital Network) product, the Netopia ISDN modem, due later this quarter. Aimed at users seeking high-speed Internet access, the $549 modem is a dual-channel ISDN terminal adapter that includes a built-in NT1 and a POTS (plain old telephone service) jack. Internet connectivity software is also included. Thanks to a new service called Up & Running, Guaranteed!, users can pay the Alameda, Calif., company to order the ISDN line, configure the Netopia ISDN modem and connect to an Internet service provider.

NEWTON, ROUND 2

Apple will be dedicating a chunk of its booth space to the second coming of the Newton OS, which was a hit at Comdex in November. The Newton area will feature demonstrations of Apple's new PDA operating system; Newton Backup Utility; Newton Press, a drag-and-drop Newton book-making tool; and third-party products that showcase Newton integration with the rest of the world. Symantec Corp., Intuit Inc., ON Technology Corp., Claris Corp. and Now Software Inc. will show applets that link to their desktop productivity products. Wynd Communications Inc. and RadioMail Inc. will demonstrate Newton 2.0 e-mail, and AllPen Software Inc. will show NetHopper, a forthcoming Web browser for the Newton.



Live Picture (the company) will ship Live Picture 2.5 (the software), now with EPS import and export and direct support for Photoshop filters, at the expo.

FREEHAND STUDIO

San Francisco-based Macromedia Inc. this week will unveil the FreeHand Graphics Studio, a $699 bundle of four design applications: FreeHand, xRes, Extreme 3D and Fontographer. The company will also debut Shockwave for FreeHand, a free plug-in to Netscape Navigator 2.0 that will let users display graphics created in FreeHand on the Web and use them as hot links to URLs (uniform resource locators).

PIPPIN PLAYER

Apple will showcase Bandai Co. Ltd.'s Pippin-based Power Player in both its main booth and developer area. In addition to Pippin games and entertainment titles, Apple will demonstrate the clone's Internet connections. Sources said the unit is on track for a March release in Japan and may hit U.S. shelves this summer.

THUNDER ROLLS

Casady & Greene Inc. of Salinas, Calif., has rescued Thunder 7, the popular universal spelling-checker utility from defunct Baseline Publishing Inc. The utility is being updated to work with the latest Mac hardware and will resume shipping in the first quarter for $99 under its new name, Spell Catcher.

RESOLUT PSC

Scitex America Corp. of Bedford, Mass., will ship ResoLUT PSC, a Power Mac application that it said provides industrial-grade color tools. The $4,500 software package lets users perform color corrections using Scitex transformation tables and produce CMYK separations. Scitex previously offered the same functionality in an $8,000 NuBus card and software.

MATHEMATICA LINK

Combining verbal and math skills, Wolfram Research Inc. of Champaign, Ill., has Mathematica Link for Microsoft Word. The tool lets Word users simply enter calculations in the word processor to access Mathematica's numeric, graphics and programming capabilities. □

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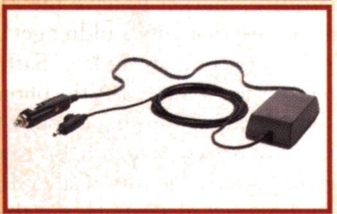

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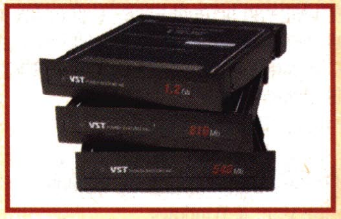

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Instatower

From Page 1

rather than in back, of the case, providing easier access to cables and allowing the machine to be placed closer to a wall.

Instatower's RAM will be expandable to 136 Mbytes; it will also include an optional Level 2 cache; a Performa 630-style communications slot; two additional 5.25-inch expansion bays; 1 Mbyte of dynamic RAM for video; an infrared receiver for remote-control functions; and SCSI, ADB and GeoPort connectors.

Sources said Instatower will arrive in Europe and Asia in the second quarter, making its way into the hands of U.S. education customers in the late spring or early summer and consumers in the fall.

According to sources, Apple will also announce this summer two lower-end consumer Power Macs, both with PCI slots. Code-named Camelot and Excalibur, the new systems will come with either a 75- or 90-MHz PowerPC 603, one 7-inch PCI slot, 8 Mbytes of RAM, an 800-Mbyte IDE hard drive, and a quadruple-speed CD-ROM drive. Sources said the modular Camelot system will be priced starting at about $1,350, not including a monitor; a similar all-in-one Excalibur system will cost about $1,625.

The Quadra 630-style Camelot system will reportedly replace the Quadra 630 and Power Mac 6200; Excalibur will replace the all-in-one, 68040-based LC 475 and 575.

Excalibur's enclosure will be similar to that of the Performa 5200, but its logic board will include a PCI slot rather than a processor direct slot. Built into Excalibur's case will be a 15-inch, shadow mask display with a 0.28mm dot pitch; the 1 Mbyte of built-in video memory will support 16-bit color.

Designed to be the lowest-cost modular and all-in-one Power Macs, Camelot and Excalibur will reportedly support up to 64 Mbytes of RAM and have a communications slot for an Ethernet card or fax modem. Both Camelot and Excalibur will support video-in and TV tuner cards, but, according to sources, they will be available only separately. Camelot and Excalibur will not include Level 2 caches; users will need to purchase these options separately as well.

Apple declined to comment. □

ATI

From Page 1

Inc. in Seaford, N.Y. "There's been nothing at the low-end price point that comes close to that performance."

According to ATI, the XClaim MM will display full-screen, full-motion video using the broadcast-video YUV422 color space, which the company said is equivalent to 16-bit color. The card will digitize video at 320 by 240 pixels and use hardware interpolation to achieve 640-by-480-pixel resolution. Interpolation in both horizontal and vertical directions results in more natural-looking video with fewer artifacts, ATI said.

The card will provide 64-bit QuickDraw acceleration. Coming standard with 2 Mbytes of video RAM, it will display 24-bit color at resolutions up to 832 by 642 pixels or eight-bit color at resolutions up to 1,152 by 870. With an additional 2-Mbyte VRAM daughtercard, expected to cost about $70, the XClaim MM will display 24-bit color at 1,152-by-8700-pixel resolution.

ATI said the optional TV tuner will use the Mac to offer features above and beyond the standard TV fare. For example, users could have the Mac search closed-caption text and notify them when a particular word appears.

The MPEG daughtercard will play back full-screen, full-motion video at 30 frames per second. When software MPEG compressor-decompressors are available on the Mac, the XClaim MM will accelerate software decoding even without the daughtercard, ATI said.

ATI Technologies Inc. of Thornhill, Ontario, can be reached at (905) 882-2600; fax (905) 882-2620; http://www.atitech.ca. □

FileMaker learns to relate

By Clifford Colby

Celebrating delivery of the next generation of FileMaker Pro at the end of 1995, Claris Corp. will showcase a relational version of the popular database at this week's Macworld Expo in San Francisco.

Version 3.0 lets users set up relationships between data and define one-to-many, many-to-one and many-to-many relationships. Users of the upgrade can convert flat-file FileMaker databases into relational versions, but they can also choose to keep files in a flat-file format.

New scripting capabilities include conditional testing, such as "If ... then ... else" statements, loops and error checking.

Word processing features now include enhanced paragraph-formatting options and a ruler for text styles. The company also added a new button-creation tool on the tool-bar palette.

Version 3.0 features mail-merge capabilities and support for automatic phone dialing. The upgrade lets users drag data and objects between FileMaker Pro databases and other applications.

Claris has boosted the number of files that can be open at once from 16 to 50 and raised the file-size roof to 2 Gbytes, up from 32 Mbytes. The new Mac version includes support for TCP/IP.

FileMaker Pro 3.0 is available for 680x0-based and Power Macintoshes and Windows 95 and Windows NT machines and costs $199; upgrades are $99. Claris said it does not plan to release a Windows 3.1 version.

"Claris is listening to what its customers say," said Jack Ranieri, manager, corporate MIS, for TSB International Inc., a product and service provider for voice networks in Etobicoke, Ontario. "They have put in the features we asked for, which opens the door for more functionality.

"FileMaker becoming relational is my No. 1 feature," Ranieri said. "The conditional scripting is going to make a difference because we have hit a wall with what we could do. And adding TCP/IP is also important; now, all our remote offices can access our databases over the Internet."

Claris also shipped Version 3.0 of its $999 FileMaker Pro Server. Users who have Version 2.0 or higher can upgrade for $299.

Claris Corp. of Santa Clara, Calif., is at (408) 727-8227 or (800) 544-8554; fax (408) 987-3932; http://www.claris.com. □

YoYo

From Page 1

with Symantec Corp.'s ACT!, Now Software Inc.'s Now Contact and TouchBase, or any PIM supporting AppleScript or Microsoft MAPI (Messaging API).

Paul Saffo, a director at the Institute for the Future in Menlo Park, Calif., said that he thinks YoYo is a "really cool product" that will "sell like crazy. What this company is doing is delivering products that will allow people in the [small-office, home-office] market to have the kind of phone service that you couldn't get unless you're in a big company today," Saffo said.

YoYo requires Caller ID, the phone service that displays the number from which a call is being placed, which helps to determine the caller's identity. Caller ID has been authorized in 48 states and the District of Columbia; it is available in 47 states and D.C., according to Mark Fogelman, an attorney with the San Francisco-based California Public Utilities Commission, an organization whose challenges to Caller ID have delayed the service's deployment in California.

According to a 1995 study by International Data Corp. of Framingham, Mass., 10 percent of U.S. households subscribe to Caller ID services, and 12.7 percent said they intend to subscribe in the next 12 months.

Fogelman said that half of California's 32 million residents have nonpublished numbers, and those subscribers are expected to block Caller ID information from being transmitted as well, through a service called per-line blocking. Fogelman added that 25 states have per-line blocking available to all subscribers, and 41 states have some form of per-line blocking available.

"Without Caller ID, I'm not sure YoYo makes a lot of sense," Saffo said. "With Caller ID, I think it's vastly better than anything out there. I think the first-generation product is going to be like using a fax modem: It's not conceptually difficult, but there will be fiddly details to deal with."

Big Island Communications Inc. of Cupertino, Calif., can be reached at (408) 342-8300; fax (408) 257-7306; info@big-island.com. □

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White Pine
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Power

From Page 1

significant front-loaded commitment from Power." As to Microsoft's motivation for doing the bundle, an East Coast retailer had one explanation, "[The deal] gives Microsoft another channel for Mac Office, which is not exactly flying off the shelves."

Apple stopped offering Microsoft Works on its Performa line in 1993. In an interview with MacWEEK last summer, Microsoft Chairman Bill Gates said, "[Apple] has not given us a chance with our Works product."

According to Meltzer, "OEM licensing is part of Microsoft's tradition." The company currently has 12 Intel-standard licensees for Office for Windows, he added.

Ken Krich, president of Mac retailer ComputerWare of Sunnyvale, Calif., said, "Bundles on high-end machines, like the kind Office users have, have to be priced at a point that's cheaper than an upgrade; otherwise, I don't see why it's so compelling."

One source expects Power to price its bundled Office for about $240, just below street price.

Power declined to comment on information from unnamed sources.

In other news, Power this week will debut PowerCurve 601/120, its new line of entry-level clones. The company said the machines will ship later this month.

Based on the 120-MHz PowerPC 601, the systems use a CPU daughtercard like the one used in PowerWave models, although Power would not comment on CPU upgrade plans for the new machines.

Users can choose between a pair of PowerCurve chassis — a desktop model similar to the PowerWave, or a new low-profile case that will cost $50 less (see MacWEEK, Dec. 11, 1995, Page 1).

In addition to the standard floppy port, the desktop model offers two external 5.25-inch bays as well as internal bays for two 3.5-inch hard drives. The low-slung system has bays for one external and one internal drive.

Power said a base low-profile model, including 8 Mbytes of RAM, an 840-Mbyte drive, 2 Mbytes of video RAM, a keyboard, mouse and software bundle (without Office), will cost $1,849. A model with 16 Mbytes of RAM, a 4x CD-ROM drive and a 1-Gbyte drive will be $2,449.

The systems will come with three PCI slots on a riser daughterboard. Contrary to previous reports, Power will not offer PowerCurve users the NuBus/PCI riser card (see story, left).

All PowerCurve models have Level 2 cache and VRAM slots; with 4 Mbytes of VRAM, PowerCurve can support up to 24-bit color at 1,024 by 768 pixels. The machines also have both 10BASE T and AAUI (Apple attachment unit interface) Ethernet connectors.

Power Computing Corp. of Austin, Texas, is at (512) 258-1350 or (800) 999-7279; fax (512) 250-3390; info@powercc.com; http://www.powercc.com. □

Selected PowerCurve 601/120 configurations

RAM	HARD DRIVE	ENCLOSURE	OPTIONS	PRICE
8 MB	840 MB	Low-slung	None	$1,849
8 MB	840 MB	Desktop	None	$1,899
8 MB	840 MB	Low-slung	14" color display	$1,849
16 MB	1 GB	Low-slung	4x CD-ROM	$2,449

All configurations come standard with Super VGA, Mac video, audio, SCSI, ADB, and AAUI and 10BASE T Ethernet ports; three PCI slots; 2 Mbytes of VRAM; floppy drive; keyboard; mouse; and software bundle, which includes ClarisWorks, FWB Inc.'s CD-ROM ToolKit, Intuit Inc.'s Quicken, Nisus Writer and several Now Software Inc. products. Configurations do not include Microsoft Office.

Power delays PCI-NuBus board

Power Computing Corp. recently addressed availability of the NuBus option for its PowerWave clones.

Power said that its $249 mixed NuBus and PCI board for the PowerWave machines will not ship in volume until February. PowerWave models ship with a riser expansion daughterboard that holds up to three PCI cards. The optional mixed riser will offer two NuBus and two PCI slots.

Power said the availability trouble stems from problems with StarGate, the PCI-to-NuBus bridge chip developed with support from Apple (see MacWEEK, Sept. 11, Page 1) and manufactured by Toshiba Corp. According to Power, the major run of the chip was contaminated during fabrication, which caused the delay.

In addition, several companies reported compatibility problems with the bridge card, including display, data-acquisition and video accelerators.

Power said it has resolved incompatibility with Radius Corp.'s Thunder line of digital signal processor-based graphics accelerators and is working on National Instruments Inc.'s GPIB (General Purpose Interface Bus) data-acquisition cards. The company said additional problems exist with Data Translation Inc.'s Media 100 system.

"PowerWave is a rock-solid product as a PCI machine," said Michael Rosenfelt, Power director of marketing. "As we find other NuBus incompatibilities, we will work with customers to solve them."

Users not willing to wait for StarGate can use Austin, Texas-based Second Wave Inc.'s Xpanse PN line of expansion chassis, which cost from $795 to $1,795. — *By David Morgenstern*

Cameras

From Page 1

tical path and image-processing algorithms, all designed by Kodak, are housed in a body based on a Chinon America Inc. design. Capturing 24-bit images at 756 by 504 pixels, the camera offers three compression levels. Kodak said the camera's 1 Mbyte of internal RAM can hold 22, 11 or seven images, depending on image quality. PC Cards expand the capacity, Kodak said.

The camera has an equivalent ISO rating of 84, and snapshots can be taken every two seconds. Images are saved in a proprietary format, but the camera ships with PictureWorks Technology Inc.'s PhotoEnhancer 1.8, which lets users color-correct images and save them in a variety of formats.

The DC-50 will ship this week. Kodak will also cut the street price of the DC-40 to $679.

Fuji will demonstrate its new Fujix DS-220 and said it plans to ship the camera this spring.

Kodak
MODE
SELECT
ERASE

Kodak's handheld DC-50 camera offers a 3x zoom lens and a slot for PC Cards. Users can remove and replace the cards at any time.

With a street price of about $1,700, the new model features a dual telephoto/wide-angle lens, PC Card storage and NTSC video output for previews. The camera captures 24-bit-color images at 640 by 480 pixels and offers three JPEG compression options.

The DS-220's dual lens is equivalent to lenses of 36mm and 72mm in a conventional film camera, with equivalent ISO ratings of 120 and 240, respectively.

The camera itself has no internal memory. With a standard Type I or Type II card installed, the DS-220 can capture a series of shots at 1 frame per second. The device can accommodate 20 to 40 images on a 2-Mbyte card, and up to 425 compressed images can fit on a 20-Mbyte card.

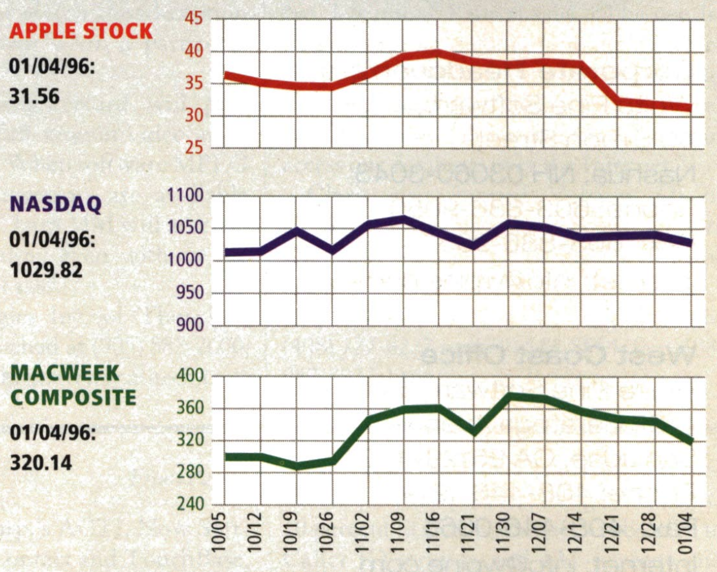
Optional attachments include a 2-inch LCD monitor for previewing images and a macro lens adapter for focusing at distances as close as 5 inches. Pricing for the options has not been set.

Previous generations of handheld digital cameras often drew on camcorder sensors with rectangular pixels optimized for video output. Both new cameras use square pixels, which, according to Kodak, yield fewer artifacts and better image quality.

Eastman Kodak Co. of Rochester, N.Y., can be reached at (716) 726-7260 or (800) 235-6325; http://www.kodak.com.

Fuji Photo Film U.S.A. Inc. of Elmsford, N.Y., can be reached at (914) 789-8100 or (800) 378-3854; fax (914) 789-8295. □

StockWatch



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Apple	31.56	-1.37
MacWEEK Composite*	320.14	-7.34
SOFTWARE DEVELOPERS		
Adobe	58.50	-4.49
Caere	7.75	6.90
CE Software	2.38	-11.63
Graphsoft	7.00	7.69
Insignia	6.00	-50.00
Intuit	68.00	-10.23
Macromedia	42.50	-16.67
Microsoft	87.38	0.00
Novell	14.75	1.72
Oracle	40.75	-3.83
Symantec	19.38	-11.93
STORAGE		
Conner	19.75	-3.66
Iomega	47.00	-2.59
Maxtor	6.63	1.92
Pinnacle	15.25	-1.61
Quantum	16.63	2.31
Seagate	46.00	-2.13
SyQuest	10.13	-5.81

	01.04.96 CLOSE	WEEKLY % CHANGE
PERIPHERALS VENDORS		
AmeriQuest	1.13	20.00
Asanté	6.88	-16.67
Focus	6.49	3.00
Global Village	18.00	-4.64
HP	79.88	-4.63
QMS	5.13	13.89
Radius	2.13	6.25
Shiva	67.25	-4.95
Tektronix	46.38	-5.12
Truevision	5.06	2.53
DISTRIBUTORS		
CompUSA	32.38	4.44
IE	6.00	0.00
Merisel	4.50	9.09
Tech Data	14.88	-4.80
INDUSTRY INDICATORS		
Compaq	46.00	-1.60
IBM	86.88	-3.61
Intel	57.50	0.68
Motorola	58.63	3.08
SGI	23.38	-16.14
NASDAQ	1029.82	-1.19

**The MacWEEK Composite is calculated by adding the stock prices of the following companies: Apple, Adobe, Asanté, Caere, CE Software, Global Village, Intuit, Macromedia, Radius, Shiva, SyQuest and Truevision. Source: Nordby International Inc.*

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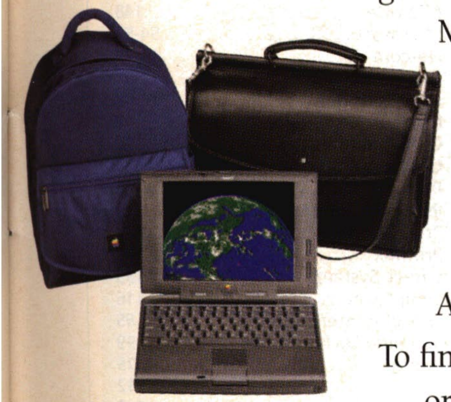

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ZD Net/Mac this week

Big Mac Catalog attack

Mac fans, rejoice — we've just released a new version of ZD Net/Mac's popular Macintosh Catalog. This FileMaker Pro 2.0 database provides complete specs on every Mac model from the archaic 128K to the latest clones. A stand-alone version is also available. Look for this invaluable resource in ZD Net/Mac on CompuServe (go zmc:macutil), on eWorld (shortcut: shareware) or on the Web at http://www.zdnet.com/~macuser/mu_0296/utility.html.

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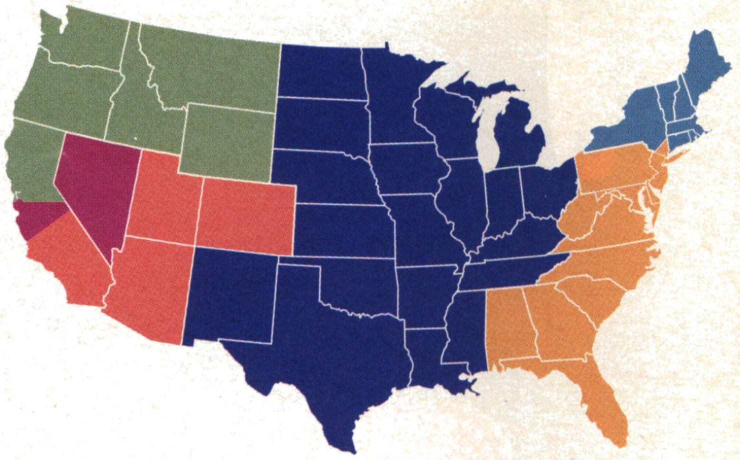

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🟪 [4] Includes San Francisco Bay Area south of the San Mateo Bridge to San Luis Obispo

🟥 [5] Includes Southern California south of San Luis Obispo, Arizona, Utah and Colorado

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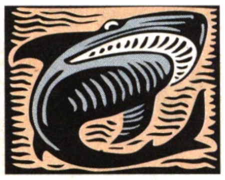


Fast video, fiery clones, ISDN, beer

New Year's is a time to stand back and take stock (or divest, if you happened to have bought shares of Caere Corp. in the past six months). The Rat Pack is another rodent lighter, and luckless taxpayers are still waiting for the gates to open at Yellowstone and the immigration office.

On the brighter side, AT&T's bloodletting of 40,000 souls, from hardened honchos to hapless ham-and-eggers, makes Apple's Scrooge moves look like small beer. Furthermore, this week's Macworld San Francisco reassures the Knife that he at least still has a job.

Also assured of gainful employment in the new year are those resourceful folks working in Apple's digital video salt mines. The Knife's battalion of moles report that the company is on the verge of announcing a licensing agreement for software MPEG decoding. The deal, which the Knife's sources suspect may go down as early as this week, promises to get the company's turgid multimedia efforts moving again.

Burning ambitions

Speaking of forward motion: New Year's also beckons to those rugged individualists who want to blaze a new trail. Reports from another trade paper, which shall remain nameless, cast Power Computing as hot to trot into the realm of laptop Mac clones, starting with a model based on the PowerBook 5300 that is slated to ship this month.

Much as he hates to pour cold water on the competition, the Knife must question the who, what, when and why of this info. Word is that while a few burnouts in Apple engineering may still be carrying a torch for the 5300, it is in fact too hot to handle for neophyte notebook nabobs, exploding batteries notwithstanding.

And while January may be the month, 1996 is almost certainly *not* the year when users will get their hot little hands on Power's first Close 'n' Play Mac. The Knife's sources are adamant that plans are still in the discussion stage.

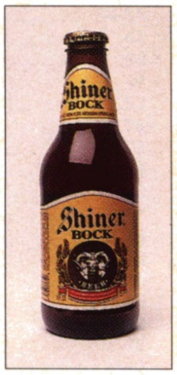
Calling all Macs

While old acquaintances should not be forgot, the season is also a time to strike up new friendships — say, with that anonymous phone caller breathing heavily into your ear.

Plucky upstart Big Island Communications, which is making its mark at expo this week with YoYo, a Mac-based Caller ID doodad, will also be engaged in a bit of backroom intrigue within its private suite. No stranger to eavesdropping, the Knife has learned that a select few will get a gander at groundbreaking ISDN-based technology designed specifically for the Macintosh.

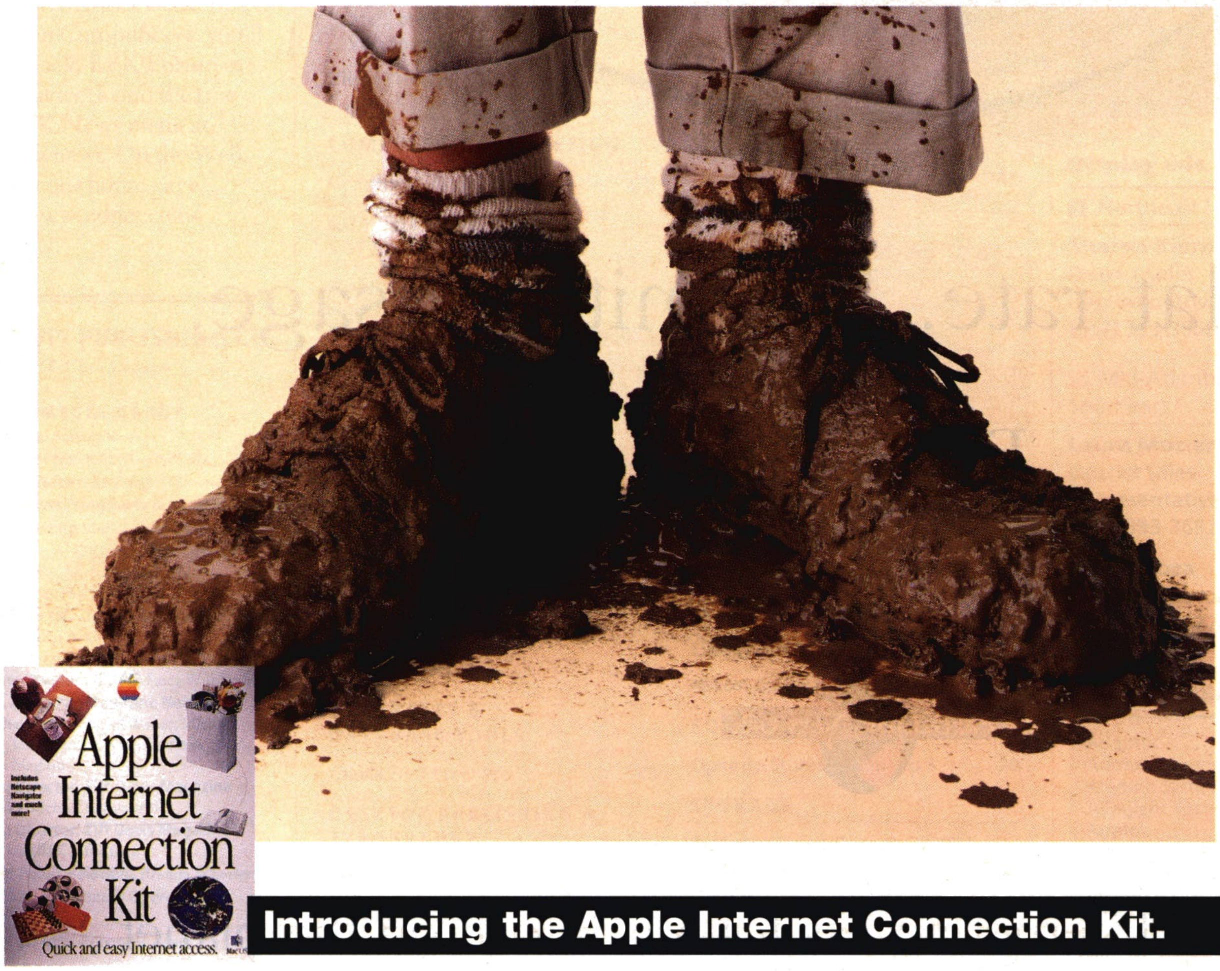
Although it presents itself as a cross-platform developer, Big Island is betting Mac users will be eager to switch from the plethora of Intel-standard PC-ported products that currently litter the ISDN landscape.

Ask your server ...



... for Shiner. No, not Apple's straight-up, no-chaser Unix box that promises to put a Mac face on an AIX OS. That on-again, off-again project may still be on tap for this summer, but in the meantime, thirsty geeks will have to toast the new year with a different potable: Shiner Bock beer from vowel-impaired Spoetzl Brewery, which works its magic in Shiner, Texas. □

What better way to enjoy a cold, refreshing Shiner than served up in a frosted MacWEEK mug? Uncork your rumors and tip the Knife at (415) 243-3544; fax (415) 243-3651; mac_the_knife@macweek.com, AppleLink (macweek) or CompuServe/ZiffNet/Mac.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Just think, 30 minutes after opening the box, you could be participating in discussion groups, E-mailing Aunt Helga in Denmark, visiting the Louvre, the Library of Congress or maybe even the local chicken joint. (Seems like everybody's got a Web site nowadays.) Visit your Apple reseller, or order direct by calling **1-800-950-5382 ext. 784.** And when you do get on the Net, check out our Web site at http://www.apple.com. Apple. The power to be your best.

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☐ 01. Yes ☐ 02. No

1 What is your organization's primary business activity at this *entire* location?

(Select one only) Write Answer Here ➡ ☐

Non-Computer Related
01. Graphic Arts
02. Publishing
03. Advertising, Public Relations, Promotion
04. Digital Media Development
05. Entertainment/ Broadcast
06. Commercial Printer
07. Service Bureau/ Pre-Press
08. Aerospace
09. Architecture, Engineering
10. Telecommunications
11. Government
12. Manufacturing
13. Education: College/ University/Trade
14. Education: High School/Elementary
15. Finance: Banking, Accounting, Insurance, Real Estate, Legal
16. Health, Medical
17. Non-Computer Retailer, Wholesaler, Distributor
18. Research and Development
19. Agriculture, Mining, Construction, Oil
20. Transportation, Utilities

Computer Related
22. Manufacturer (Computers, Software, Peripherals)
23. VAR, VAD, Systems/ Network Integrator
24. Retailer/Distributor
25. Systems House/Data Processing Service
26. Computer Consultant
27. Other Businesses and Services
99. Other____________ (please specify)

2 What is your job function?

(Select one only) Write Answer Here ➡ ☐

A. Networking/Data Communications
B. MIS/DP/Information Systems
C. Systems Engineering
D. Telecommunications
E. Graphic Arts/Design
F. Production/Pre-Press
G. Video Production
H. Audio Production
I. Communications/ Publishing/Public Relations/Advertising
J. Engineering/Architecture
K. Science/Research & Development
L. Education/Training/ Development
M. Manufacturing/ Operations/Production/ Quality Control
N. Administration/ Management/Personnel
O. Accounting/Finance/ Legal
P. Sales/Marketing
Q. Purchasing
R. Consulting
Z. Other____________ (please specify)

3 Which of the following brands of systems and/or applications software do you have installed at this *entire* location? (Check all that apply)

Operating Systems
☐ 01. System 7
☐ 02. System 6, 5 or earlier
☐ 03. Unix/Xenix/AUX/AIX
☐ 04. PowerOpen
☐ 05. Windows 3.X
☐ 06. Windows NT
☐ 07. Windows 95
☐ 08. NeXTStep
☐ 09. Solaris
☐ 10. OSF/Motif
☐ 11. Other____________ (please specify)

Network Operating Systems
☐ 13. Novell NetWare
☐ 14. Unix/NFS
☐ 15. LAN Manager
☐ 16. Banyan VINES
☐ 17. AppleShare
☐ 18. DEC PathWorks
☐ 19. Other____________ (please specify)

Groupware
☐ 21. Lotus Notes
☐ 22. Windows for Workgroups
☐ 23. FirstClass
☐ 24. Novell GroupWise
☐ 25. Apple Open Collaboration Environment (AOCE)
☐ 26. Other____________ (please specify)

Database Engines
☐ 28. Oracle
☐ 29. Sybase SQL Server
☐ 30. Ingres
☐ 31. Informix
☐ 32. 4D Server
☐ 33. DB2
☐ 34. Other____________ (please specify)

On-Line Services
☐ 36. America Online
☐ 37. CompuServe
☐ 38. e-World
☐ 39. Prodigy
☐ 40. Internet
☐ 41. Delphi
☐ 42. Genie
☐ 43. Other____________ (please specify)

4 Please indicate the quantities of the computers currently installed and indicate the computers planned for purchase in one year at this *entire* location.

(Write in accurate quantities for all that apply.)

USE NUMBERS ONLY

	Currently Installed (Quantity)	PLAN TO PURCHASE
Macintosh/Compatible		
Apple Power Mac 8100	1.	1.☐
Apple Power Mac 7100	2.	2.☐
Apple Power Mac 6100	3.	3.☐
Radius Power Mac Compatible	4.	4.☐
Power Computing Power Mac Compatible	5.	5.☐
Daystar Power Mac Compatible	6.	6.☐
Other Power Mac Compatible	7.	7.☐
Macintosh Quadra	8.	8.☐
Macintosh Centris	9.	9.☐
Macintosh Performa	10.	10.☐
Macintosh PowerBook	11.	11.☐
Macintosh Duo	12.	12.☐
Macintosh Other (II, LC, SE, etc...)	13.	13.☐
Other Mac Compatible	14.	14.☐
Other Desktops		
IBM/Compatible Desktop/Laptop/Notebook	15.	15.☐
PowerPC (Non-Mac Compatible)	16.	16.☐
Workstation (SPARC, MIPS, HP/Apollo, etc.)	17.	17.☐
Other Microcomputers	18.	18.☐

5A How many servers are installed at this *entire* location? (Use numbers only) ☐

5B How many LANs are installed at this *entire* location? (Use numbers only) ☐

5C How many Macintoshes are connected to the LANs indicated in Question 5B above? (Use numbers only) ☐

6 If applicable: how many Macintoshes are sold, resold, or recommended in one year at this *entire* location? (Answer one only)

A. Retailer: Number sold per year____________
B. Reseller: Number resold per year____________
C. Consultant: Number purchased by your clients through your firm's recommendation per year____________
D. Other: Number sold/resold/recommended per year____________
☐ E. Not Applicable

7A Which of the following Macintosh-related products do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Systems
☐ 01. Apple Macintoshes
☐ 02. Mac Compatibles
☐ 03. IBM Compatible Micros
☐ 04. Servers
☐ 05. Workstations
☐ 06. Minis/Mainframes
☐ 07. Newton PDA
☐ 08. Pen-Based Computers

Networking
☐ 10. LANs
☐ 11. WANs
☐ 12. Mac to PC Links
☐ 13. Mac to Mini/ Mainframe Links
☐ 14. Mac to Unix Workstation Links
☐ 15. Modems
☐ 16. Communication/ Network Software
☐ 17. Bridges/Routers/ Gateways
☐ 18. Hubs
☐ 19. NICS

Printers
☐ 21. Laser
☐ 22. Color Laser
☐ 23. InkJet
☐ 24. Color InkJet
☐ 25. Dye Sub
☐ 26. Thermal Wax
☐ 27. Plotter
☐ 28. Portable Printer

Image Input
☐ 30. Digital Camera
☐ 31. Flatbed Scanners
☐ 32. Handheld Scanners
☐ 33. Slide Scanners
☐ 34. Drum Scanners
☐ 35. Black/White Scanners

Displays
☐ 37. 14 inch
☐ 38. 15 inch
☐ 39. 17 inch
☐ 40. 21+ inch
☐ 41. LCD Projection Panel
☐ 42. Presentation Monitors

Peripherals
☐ 44. UPS
☐ 45. External Speakers
☐ 46. Input Devices
☐ 47. Video Deck
☐ 48. Image Setter

Storage
☐ 50. Photo CD
☐ 51. Magneto Optical
☐ 52. RAID
☐ 53. Hard Drive 1 Gig +
☐ 54. Hard Drive < 1 Gig

Add-In Boards
☐ 56. CD Recorder
☐ 57. Memory Boards
☐ 58. Display Boards
☐ 59. Video Digitizer Boards
☐ 60. Accelerator Boards
☐ 61. Sound Boards
☐ 62. MIDI
☐ 63. Video Capture/ Compression

99.☐ None of the above

- Your Signature ____________________

Title ____________________ Date ___/___/___

7B Which of the following systems and/or applications software do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Graphic Arts
☐ 01. Desktop Publishing
☐ 02. Electronic Publishing
☐ 03. Painting/Drawing Programs
☐ 04. Photo Retouching
☐ 05. Page Layout
☐ 06. Illustration Programs
☐ 07. Fonts
☐ 08. Pre-Press
☐ 09. Color Management
☐ 10. Digital Video
☐ 11. Other____________ (please specify)

Multimedia
☐ 13. Authoring Software
☐ 14. Video Editing
☐ 15. Sound Editing
☐ 16. Music Composition/ Editing
☐ 17. Animation
☐ 18. Clip Media (Sound and Art)
☐ 19. Other____________ (please specify)

Presentation Graphics
☐ 21. Presentation Software
☐ 22. Multimedia Presentations
☐ 23. Charting Program
☐ 24. Other____________ (please specify)

Design/Engineering
☐ 26. CAD/CAM
☐ 27. 2/D - 3/D Modeling
☐ 28. Simulation
☐ 29. Other____________

Business Applications
☐ 31. Word Processing
☐ 32. Spreadsheets
☐ 33. Databases
☐ 34. Project Management
☐ 35. Accounting/Payroll
☐ 36. Groupware
☐ 37. Desktop Video Conf.
☐ 38. Document Management
☐ 39. Mapping/GIS

☐ 40. Pen-Based Applications
☐ 41. Other____________ (please specify)

Systems Management
☐ 43. Operating Systems
☐ 44. Utilities
☐ 45. Applications Development
☐ 46. CASE
☐ 47. Programming Languages
☐ 48. Compilers
☐ 49. SQL Applications
☐ 50. Client Server Applications
☐ 51. Other____________ (please specify)

99.☐ None of the above

8 If you indicated purchasing involvement for computers, computer products or services in Question 7A or Question 7B, for how many Macintoshes do you have this involvement? (Select one only) Write Answer Here ➡ ☐

01. 2000+
02. 1000-1999
03. 500-999
04. 100-499
05. 50-99
06. 20-49
07. 10-19
08. 5-9
09. 1-4
99. None

9 For what applications are the Macintoshes at your location used? (Check all that apply)

☐ 01. Graphic Arts
☐ 02. Presentation Graphics
☐ 03. Multimedia
☐ 04. Design/Engineering
☐ 05. Business Applications
☐ 06. Systems Management
☐ 99. Other____________ (please specify)

10 Over the course of one year, do you specify, recommend, buy, or approve the purchase of host systems, desktops, networking products, peripheral equipment and/or software worth: (Write number in box)

1. $5,000,000 or more
2. $2,500,000 to $4,999,999
3. $1,000,000 to $2,499,999
4. $600,000 to $999,999
5. $400,000 to $599,999
6. $200,000 to $399,999
7. $100,000 to $199,999
8. $50,000 to $99,999
9. $25,000 to $49,999
10. $10,000 to $24,999
11. Less than $10,000
99. None

Product Category	For this location (Write number in box)	For other locations (Write number in box)
Host Systems (Mainframes/Minis)	A. ☐	G. ☐
Desktops/Portables (Micros/Workstations)	B. ☐	H. ☐
Networking Products (include Servers)	C. ☐	I. ☐
Peripheral Equipment	D. ☐	J. ☐
Software Products	E. ☐	K. ☐
Service/Support	F. ☐	L. ☐

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